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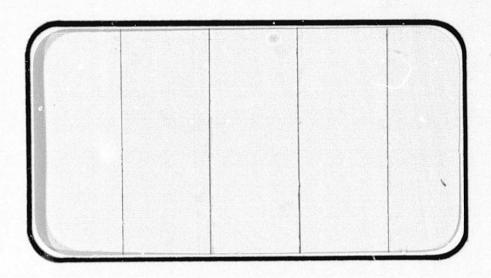
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(NASA-CR-144610) AFRCHEATING (PRESSURE) CHARACTERISTICS ON A C.O10- CALE VERSION OF THE VEHICLE 3 SPACE SEUTTLE CONFIGURATION (26-OTS) IN LANGLEY RESEARCH CENTER 4-FOOT WIND TUNNEL (IH4) (Chrysler Corp.) 473 p G3/18 41871

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER HOUSTON, TEXAS

DATA MANagement services



DMS-DR-2138 NASA CR-144,610 VOLUME 3 OF 4

AEROHEATING (PRESSURE) CHARACTERISTICS ON A

0.010-SCALE VERSION OF THE VEHICLE 3 SPACE SHUTTLE

CONFIGURATION (26-OTS) IN THE LANGLEY RESEARCH CENTER

4-FOOT WIND TUNNEL (1H4)

by

R. B. Kingsland Shuttle Aero Sciences Rockwell International Space Division

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services Chrysler Corporation Space Division New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center National Aeronautics and Space Administration Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:

- LaRC UPWT 1059

NASA Series Number:

IH4

Model Number:

26-0TS

Test Dates:

November 12 through November 16, 1973

Occupancy Hours:

32

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AEROHEATING (PRESSURE) CHARACTERISTICS ON A

0.010-SCALE VERSION OF THE VEHICLE 3 SPACE SHUTTLE

CONFIGURATION (26-OTS) IN THE LANGLEY RESEARCH CENTER

4-FOOT WIND TUNNEL (1H4)

by

R. B. Kingsland Rockwell International Space Division

ABSTRACT

This report presents the results of wind tunnel tests, IH4, conducted at the Langley Research Center Unitary Plan Wind Tunnel. The model tested was an 0.010-scale version of the Vehicle 3 Space Shuttle Configuration. Pressure measurements were made on the launch configuration, Orbiter alone, external tank alone, and solid rocket booster alone, to provide heat transfer pressure data.

The tests were conducted for a Mach number range from 2.36 to 4.6 and Reynolds number range from 1.2 to 5 x 10^6 per foot. The model was tested at angles of attack from -10° to 20° for a sideslip angle range from -5° to +5°, and at sideslip angles from -5° to 48° for 0° angle of attack.

This report for IH4 consists of four volumes:

Volume 1 - data figures 4 through 47

Volume 2 - data figures 48 through 92

Volume 3 - tabulated source data, pages 1-401 (R data sets)

Volume 4 - tabulated source data, pages 402-926 (M and A data sets).

TABLE OF CONTENTS

	Page
ABSTRACT	iii
INDEX OF MODEL FIGURES	2
INDEX OF DATA FIGURES	3.
NOMENCLATURE	12
CONFIGURATIONS INVESTIGATED	16
TEST FACILITY DESCRIPTION	17
TESTING AND PROCEDURE	18
DATA REDUCTION	19
TABLES	
I TEST CONDITIONS	_i 21
II. DATA SET/POINT NUMBER COLLATION SUMMARY	22
III. MODEL DIMENSIONAL DATA	27
IV. ORIFICE LOCATIONS	:39
V. ORIFICE VS VALVE-PORT	47
VI. VALVE-PORT VS ORIFICE NUMBER	50
VII. S-V CONFIGURATION VS TRANSDUCER	52
FIGURES	
MODEL	53
DATA	69
VOLUME 1Pages 1-513	
VOLUME 2Pages 514-973	
APPENDIX	.i. 1 *
TABULATED SOURCE DATA	69
VOLUME 3 Pages 1-401 VOLUME 4 Pages 402-926	

INDEX OF MODEL FIGURES

Fiqure	Title	Page
1.	Integrated Vehicle General Arrangement.	53
2.	Model sketches.	
	a. Instrumentation Location	54
	b. 26-OTS Orbiter	55
	c. 26-OTS Orbiter Fuselage Cross-Section	56
	d. 26-OTS Orbiter OMS Pods	57
	e. Left Wing Leading Edge	58
	f. 26-OTS Vertical Tail	59
	g. 26-OTS ET Pressure Tap Locations	60
	h. 26-OTS SRB Pressure Tap Locations	61
	i. 26-OTS SRB Skirt Detail	62
3.	Model photographs.	
	a. Integrated Vehicle, 0 ₁ + T ₁₅ + S ₈ N ₁₆	63
	b. Integrated Vehicle, 0 ₁ + T ₂₂ + S ₈ N ₁₆	64
	c. Orbiter, 07	65
	d. External Tank, T ₁₅	66
	e. Solid Rocket Booster, Sg	67

INDEX OF DATA FIGURES

·	TINDEX OF DATA F	PLOTTED		
FIGURE NUMBER	TITLE	COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
VOLUME 4	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER FUSELAGE, BETA=-5, RN/L=3.		ALPHA, PHI, X/LB, MACH	1-8
5	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER LOWER WING, BETA=-5, RN/L=		ALPHA, 2Y/BW, MACH	9-14
6	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER UPPER WING, BETA=-5, RN/L=		ALPHA, 2Y/BW, MACH	15-16
7	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER VERTICAL TAIL, BETA=-5, RN		ALPHA, Z/BV, MACH	17-18
8	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, EXTERNAL TANK, BETA=-5, RN/L=3.0	E D	ALPHA, THETA, X/LT, MACH	19-40
9	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T15, SOLID ROCKET BOOSTER, BETA=-5, RN/		ALPHA, PSI, X/LSRB, MACH	41-54
10	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER FUSELAGE, BETA=0, RN/L=1.2		ALPHA, PHI, X/LB, MACH	55-70
11	VARIATION OF CP/CPS ON THE INTEGRATED VEHICL WITH T15, ORBITER LOWER WING, BETA=0, RN/L=1		ALPHA, 2Y/BW, MACH	71-82
12	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T15, ORBITER UPPER WING, BETA=0, RN/L=		ALPHA, 2Y/BW, MACH	83-86
13	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T15, ORBITER VERTICAL TAIL, BETA=0, RN/		ALPHA, Z/BV, MACH	87-90
14	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T15, EXTERNAL TANK, BETA=0, RN/L=1.2	E D	ALPHA, THETA, X/LT, MACH	91-134

<u> </u>	 INDEX OF DATA FIGURES (CON	PLOTTED		
FIGURE NUMBER	TITLE	COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
15	OF CP/CPS ON THE INTEGRATED VEHICLE SOLID ROCKET BOOSTER, BETA=0, RN/L=1	.2 E	ALPHA, PSI, X/LSRB, MACH	135-162
16	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER FUSELAGE, BETA=0, RN/L=3.0	A	ALPHA, PHI, X/LB, MACH	163-178
17	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER LOWER WING, BETA=0, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	179-190
18	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER UPPER WING, BETA=0, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	191-194
19	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER VERTICAL TAIL, BETA=0, RN/L=	3.0	ALPHA, Z/BV, MACH	195-198
20	OF CP/CPS ON THE INTEGRATED VEHICLE EXTERNAL TANK, BETA=0, RN/L=3.0	D	ALPHA, THETA, X/LT,MACH	199-242
21	OF CP/CPS ON THE INTEGRATED VEHICLE SOLID ROCKET BOOSTER, BETA=0, RN/L=3	E	ALPHA, PSI, X/LSRB, MACH	243-270
22	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER FUSELAGE, BETA=0, RN/L=5.0	Α	ALPHA, PHI, X/LB,MACH	271-282
23	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER LOWER WING, BETA=0, RN/L=5.0	В	ALPHA, 2Y/BW, MACH	283-291
24	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER UPPER WING, BETA=0, RN/L=5.0	В	ALPHA, 2Y/BW, MACH	292-294
25	OF CP/CPS ON THE INTEGRATED VEHICLE ORBITER VERTICAL TAIL, BETA=0,RN/L=5.	O C	ALPHA, Z/BV, MACH	295-297

	<u> </u>	······································	INDEX OF DATA FIGURES			
FIGURE NUMBER		TITLE		PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
26			THE INTEGRATED VEHICLE , BETA=0, RN/L=5.0	D	ALPHA, THETA, X/LT, MACH	298-330
27			THE INTEGRATED VEHICLE BOOSTER, BETA=O, RN/L=5.	E 0	ALPHA, PSI, X/LSRB, MACH	331-351
28			THE INTEGRATED VEHICLE AGE, BETA=5, RN/L=3.0	А	ALPHA, PHI, X/LB, MACH	352-359
29			THE INTEGRATED VEHICLE WING, BETA=5, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	360-365
30			THE INTEGRATED VEHICLE WING, BETA=5, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	366-367
31			THE INTEGRATED VEHICLE CAL TAIL, BETA=5, RN/L=3	C .0	ALPHA, Z/BV, MACH	368-369
32			THE INTEGRATED VEHICLE , BETA=5, RN/L=3.0	D	ALPHA, THETA, X/LT, MACH	370-391
33			THE INTEGRATED VEHICLE BOOSTER, BETA=5, RN/L=3.	.0 E	ALPHA, PSI, X/LSRB, MACH	392-405
34			THE INTEGRATED VEHICLE AGE, BETA=0, RN/L=3.0	A	ALPHA, PHI, X/LB, MACH	406-413
35			THE INTEGRATED VEHICLE WING, BETA=0, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	414-419
36			THE INTEGRATED VEHICLE WING, BETA=0, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	420-421

FIGURE NUMBER	TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
37	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T22, ORBITER VERTICAL TAIL, BETA=0, RN/L=3	.0	ALPHA, Z/BV, MACH	422-423
38	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T22, EXTERNAL TANK, BETA=0, RN/L=3.0	D	ALPHA, THETA, X/LT, MACH	424-445
39	VARIATION OF CP/CPS ON THE INTEGRATED VEHICLE WITH T22, SOLID ROCKET BOOSTER, BETA=0, RN/L=3.0	E 0	ALPHA, PSI, X/LSRB, MACH	446-459
40	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, FUSELAGE, BETA=-5, RN/L=3.0	A	ALPHA, PHI, X/LB, MACH	460-467
41	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, LOWER WING, BETA=-5, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	468-473
42	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, UPPER WING, BETA=-5, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	474-475
43	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, VERTICAL TAIL, BETA=-5, RN/L=3.0	C	ALPHA, Z/BV, MACH	476-477
44	VARIATION OF CP/CFS ON THE ISOLATED ORBITER, FUSELAGE, BETA=0, RN/L=1.2	A	ALPHA, PHI, X/LB, MACH	478-493
45	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, LOWER WING, BETA=0, RN/L=1.2	В	ALPHA, 2Y/BW, MACH	494-505
46	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, UPPER WING, BETA=0, RN/L=1.2	В	ALPHA, 2Y/BW, MACH	506-509
47	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, VERTICAL TAIL, BETA=0, RN/L=1.2	C	ALPHA, Z/BV, MACH	510-513

	THOUNG OF BUILDINGS	PLOTTED		
FIGURE NUMBER	TITLE	COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
VOLUME 48		A	ALPHA, PHI, X/LB, MACH	514-529
49	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, LOWER WING, BETA=0, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	530-541
50	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, UPPER WING, BETA=0, RN/L=3.0	B	ALPHA, 2Y/BW, MACH	542-545
51	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, VERTICAL TAIL, BETA=0, RN/L=3.0	C .	ALPHA, Z/BV, MACH	546-549
52	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, FUSELAGE, BETA=0, RN/L=5.0	A	ALPHA, PHI, X/LB, MACH	550-561
53	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, LOWER WING, BETA=0, RN/L=5.0	В	ALPHA, 2Y/BW, MACH	562-570
54	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, UPPER WING, BETA=0, RN/L=5.0	B	ALPHA, 2Y/BW, MACH	571-573
55	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, VERTICAL TAIL, BETA=0, RN/L=5.0	c	ALPHA, Z/BV, MACH	574-576
56	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, FUSELAGE, BETA=5, RN/L=3.0	A	ALPHA, PHI, X/LB, MACH	577-584
57	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, LOWER WING, BETA=5, RN/L=3.0	В	ALPHA, 2Y/BW, MACH	585-590
58	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, UPPER WING, BETA=5, RN/L=3.0	B	ALPHA, 2Y/BW, MACH	591-592

FIGURE NUMBER	TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
59	VARIATION OF CP/CPS ON THE ISOLATED ORBITER, VERTICAL TAIL, BETA=5, RN/L=3.0	C +	ALPHA, Z/BV, MACH	593-594
60	VARIATION OF CP/CPS ON THE ISOLATED EXTERNAL TANK, BETA=0, RN/L=1.2	D	ALPHA, THETA, X/LT, MACH	595-616
61	VARIATION OF CP/CPS ON THE ISOLATED EXTERNAL TANK, BETA=0, RN/L=3.0	D	ALPHA, THETA, X/LT, MACH	617-638
62	VARIATION OF CP/CPS ON THE ISOLATED EXTERNAL TANK, BETA=0, RN/L=5.0	D	ALPHA, THETA, X/LT, MACH	639-660
63	VARIATION OF CP/CPS ON THE ISOLATED SOLID ROCKET BOOSTER(S8), ALPHA=0, RN/L=1.2	F E	BETA, PSI, X/LSRB, MACH	661-674
64	VARIATION OF CP/CPS ON THE ISOLATED SOLID ROCKE-BOOSTER(S8), ALPHA=0, RN/L=3.0	T E	BETA, PSI, X/LSRB, MACH	675-688
65	VARIATION OF CP/CPS ON THE ISOLATED SOLID ROCKET BOOSTER(S8), ALPHA=0, RN/L=5.0	Г Е	BETA, PSI, X/LSRB, MACH	689-702
66	VARIATION OF CP/CPS ON THE ISOLATED SOLID ROCKE BOOSTER(S8), MODEL ROLLED, ALPHA=0, RN/L=3.0	T E	BETA, PSI, X/LSRB, MACH	763-730
67	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER FUSELAGE, BETA=-5, RN/L=3.0	F	ALPHA, PHI, X/LB, MACH	731 - 738
68	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER LOWER WING, BETA=-5,RN/L=3.0	G	ALPHA, 2Y/BW, MACH	739-744
69	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER UPPER WING, BETA=-5,RN/L=3.0	G	ALPHA, 2Y/BW, MACH	745-746

FIGURE NUMBER	TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
70	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER VERTICAL TAIL, BETA=-5, RN/L=3.0	Н	ALPHA, Z/BV, MACH	747-748
71	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER FUSELAGE, BETA=0, RN/L=1.2	F	ALPHA, PHI, X/LB, MACH	749-764
72	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER LOWER WING, BETA=0, RN/L=1.2	G	ALPHA, 2Y/BW, MACH	765-776
73	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER UPPER WING, BETA=0, RN/L=1.2	G	ALPHA, 2Y/BW, MACH	777-780
74	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER VERTICAL TAIL, BETA=0, RN/L=1.2	Н	ALPHA, Z/BV, MACH	781-784
75	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, EXTERNAL TANK, BETA=0, RN/L=1.2	I	ALPHA, THETA, X/LT, MACH	785-806
76	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, SOLID ROCKET BOOSTER, BETA=0, RN/L=1.2	J	PSI, X/LSRB, MACH	807-820
77	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER FUSELAGE, BETA=0, RN/L=3.0	F	ALPHA, PHI, X/LB, MACH	821-836
78	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER LOWER WING, BETA=0, RN/L=3.0	G	ALPHA, 2Y/BW, MACH	837-848
79	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER UPPER WING, BETA=0, RN/L=3.0	G	ALPHA, 2Y/BW, MACH	849-852
80	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER VERTICAL TAIL, BETA=0, RN/L=3.0	н	ALPHA, Z/BV, MACH	853-856

FIGURE NUMBER	TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
81	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, EXTERNAL TANK, BETA=0, RN/L=3.0	1.	ALPHA, THETA, X/LT, MACH	857-878
82	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, SOLID ROCKET BOOSTER, BETA=0, RN/L=3.0	J	PSI, X/LSRB, MACH	879-892
83	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER FUSELAGE, BETA=0, RN/L=5.0	F	ALPHA, PHI, X/LB, MACH	893-904
84	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER LOWER WING, BETA=0, RN/L=5.0	G	ALPHA, 2Y/BW, MACH	905-913
85	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER UPPER WING, BETA=0, RN/L=5.0	G	ALPHA, 2Y/BW, MACH	914-916
86	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER VERTICAL TAIL, BETA=0, RN/L=5.0	H .	ALPHA, Z/BV, MACH	917-919
87	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, EXTERNAL TANK, BETA=0, RN/L=5.0	I	ALPHA, THETA, X/LT, MACH	920-941
88	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, SOLID ROCKET BOOSTER, BETA=0, RN/L=5.0	. J	PSI, X/LSRB, MACH	942-955
89	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER FUSELAGE, BETA=5, RN/L=3.0	F	ALPHA, PHI, X/LB, MACH	956-963
90	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER LOWER WING, BETA=5, RN/L=3.0	G	ALPHA, 2Y/BW, MACH	964-969
91	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER UPPER WING, BETA=5, RN/L=3.0	G	ALPHA, 2Y/BW, MACH	970-971

	INDEX OF DATA FIGURES (Con-	cluded)		
FIGURE NUMBER	TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
92	INTERFERENCE TO UNDISTURBED PRESSURE RATIOS, ORBITER VERTICAL TAIL, BETA=5, RN/L=3.0	Н	ALPHA,Z/BV, MACH	972-97,3
SCHEDUL	E OF PLOTTED COEFFICIENTS:			
	A) $C_p/C_{p_{stag}}$ versus X/L_b ; $C_p/C_{p_{stag}}$ versus ϕ			
	B) C _p /C _{pstag} versus X/C _W			
	C) $C_p/C_{p_{stag}}$ versus X/C_v			
	D) $C_p/C_{p_{stag}}$ versus X/L_T ; $C_p/C_{p_{stag}}$ versus θ			
	E) $C_p/C_{p_{stag}}$ versus X/L _{SRB} ; $C_p/C_{p_{stag}}$ versus ψ			
	F) P _i /P _u versus X/L _b ; P _i /P _u versus φ			
	G) P _i /P _u versus X/C _W			
	H) P ₁ /P _U versus X/C _V			
	I) P_i/P_u versus X/LT; P_i/P_u versus θ	•		•
	J) P ₁ /P _u versus X/L _{SRB} ; P ₁ /P _u versus ψ			• •

NOMENCLATURE

PLOT SYMBOL	MNEMONIC	DEFINITION
a	MILMONIC	speed of sound, ft/sec
Ab		base area, ft ²
b	BREF	wing span or reference span, in
c.g.		center of gravity
lref c	LREF	reference length or wing mean aerodynamic chord, in
С	С	local wing chord, in
Ср	СР	local pressure coefficient; $(P_n - P_{\infty})/q$
C _{Pstag}	CPSTG	stagnation pressure coefficient
C _p /C _{pstag}	CP/CPS	ratio of local static pressure coefficient to stagnation pressure coefficient
	CONFIG	configuration
	F.S.	fuselage station, in
	I.V.	integrated vehicle
L	L _.	actual length of component, in
MACH	MACH	Mach number, V/a
	M.S.	missile station, in
P ₂	PL	local static pressure; 1/2pv2, psi
	POINT	data point number
P∞	PINF	freestream static pressure, psi
P _i /P _u	PI/PU	interference to undisturbed pressure ratio
P_{ℓ}/P_{∞}	PR	ratio of local static pressure to freestream static pressure

NOMENCLATURE (Continued)

D1 000		
PLOT SYMBOL	MNEMONIC	DEFINITION
	PORT	Scanivalve port number
	RUN	run number
RN/L	RN/L	unit Reynolds number, per ft
	S-V VALVE	Scanivalve number
q	Q(PSI)	dynamic pressure; 1/2ρν², psi
	SREF	wing area or reference area, ft ²
	MRP	moment reference point
	XMRP	moment reference point on X axis, in
	YMRP	moment reference point on Y axis, in
	ZMRP	moment reference point on Z axis, in
T	Ť	temperature, °F
V	V	velocity, ft/sec
X/L _b	X/LB	distance from nose of orbiter divided by orbiter length
X/L _T	X/LT	distance from external tank nose divided by external tank length
X/L _{SRB}	X/LSRB	distance from SRB nose divided by SRB length
X\CM	X\CM	distance from wing leading edge divided by wing chord length
X/C _V	X/CV	distance from vertical tail leading edge divided by vertical tail chord length
X	X	longitudinal distance from nose of component, in

NOMENCLATURE (Continued)

PLOT		
SYMBOL	MNEMONIC	DEFINITION
Υ	. Y	lateral distance from center-line of component, in
Y/b/2	2Y/BW	distance from fuselage center-line outboard divided by semi-span length
Z	Z	vertical distance from reference plane of component, in
Z/bv	Z/BV	distance from orbiter station Z_0 = 500 divided by vertical tail span
α	ALPHA	angle of attack, deg
β	BETA	angle of sideslip, deg
Ψ	PSI	SRB ray angle measured clockwise, looking forward, from bottom center-line, deg
ф	PHI	orbiter ray angle measured clockwise, looking forward, from bottom center-line, deg
0	THETA	external tank ray angle measured clockwise, looking forward, from bottom center-line, deg
ρ	RHO	mass density, slugs/ft ³
μ	MU	freestream viscosity, lb-sec/ft ⁴
SUBSCRIPTS	. + - 5 <u>-</u>	
	0	SSV reference system
	1	conditions upstream of a shock wave
	2	conditions downstream of a shock wave
b	В	body
	FS	fuselage station, in

NOMENCLATURE (Concluded)

SUBSCRIPTS (Continued)

PLOT	•	
SYMBOL	MNEMONIC	DEFINITION
	FULL	full scale
i	I	interference-integrated vehicle data
	LE	leading edge
. &	L	local
	MS	missile station, in
n	ORI NO	orifice number, n = integer
0	0.	Orbiter '
S SRB	SRB	Solid Rocket Booster
S		static conditions
stag	S	stagnation conditions
T	Т	external tank
t		total conditions
u d	IJ	undisturbed-component alone data
V	٧	vertical tail
W	W	wing
œ		freestream

CONFIGURATIONS INVESTIGATED

(1)
$$0_7$$
 + T_{15} + S_8 N_{16} - Integrated Vehicle

$$O_1$$
 = Orbiter - B_{17} C_7 M_4 F_5 W_{103} E_{22} V_7 R_5

B₁₇ - Fuselage

C7 - Canopy

M₄ - OMS Pods

F₅ - Body Flap

W103- Wing

E₂₂ - Elevon

V7 - Vertical Tail

R₅ - Rudder

T₁₅ = External Tank with protuberances

S₈ = Solid Rocket Booster

 $N_{16} = BSRM nozzles$

- (2) $0_1 + T_{22} + S_8 N_{16}$ Integrated Vehicle T_{22} = External Tank without protuberances
- (3) 0_1 Orbiter
- (4) T₁₅- External Tank Alone
- (5) $S_8 N_{16}$ Solid Rocket Booster Alone

TEST FACILITY DESCRIPTION

The NASA LaRC 4 foot Unitary Plan Wind Tunnel (UPWT) is a closed-circuit, continuous flow, variable density facility. The test section is 4 feet by 4 feet by 7 feet long.

Two tunnel legs are available for supersonic testing in the Mach number ranges 1.47 to 2.86 (Leg No. 1) and 2.29 to 4.63 (Leg No. 2). All of these tests were made in Leg No. 2. An asymmetric, sliding block nozzle position and total pressure setting provide the test Mach numbers at a specified Reynolds number. Reynolds number can be varied from 0.76 to 7.78 million per foot. Available stagnation pressure variation is 4.0 to 142. psia. Dynamic pressure variation is 95. to 1260. psf with normal operating stagnation temperature about 150°F in Mach modes 2 or 3 and about 175°F in Mach mode 4. The tunnel is equipped with a dry air supply, an evacuating system, and a cooling system. The facility power is approximately 83,000 horsepower.

Model mounting provisions consist of various sting arrangements, including axial (longitudinal), lateral (independent pitch and yaw), and roll movement with side wall support. A Schlieren system and oil flow visualization equipment are available. Data are recorded at the tunnel and reduced off-line at the Langley Computer Center. The tunnel is used for force and moment, pressure, and dynamic stability tests. Hot and cold jet effects and heat transfer have been studied in the UPWT.

TESTING AND PROCEDURE

Before model installation, each of the 341 model orifices were checked for leaks and continuity. The location of each of the orifices on the model is presented in Table 4. It was found during this check that orifices 43, 738, and 766 were open and that orifices 121, 532, 553, 558, 590, and 715 were plugged. Of these, only orifice 43 was recorded during the tests.

During model installation, the good orifices were connected to twelve Scanivalves as indicated in Tables 5 and 6. A system leak and continuity check was made at this time and all orifices were reading good except 701 which was plugged after data point 104. No further checks were made because none of these connections were broken during the test.

A vacuum was connected to port 0 and a 1 psi reference pressure to ports 1 and 2 of each Scanivalve. Additional reference pressures of 5 psi were connected to the first two ports that were open after all model pressures were recorded on each Scanivalve. On the Scanivalves that used 10 psi transducers, the next two ports had a 10 psi reference pressure connection. The vacuum was used as a zero point in data reduction and the reference pressures were used as a check on the transducer calibrations during running, and, if necessary, to adjust the pretest calibration of the transducers. To increase the accuracy of the data, the transducers used in each of the twelve Scanivalves were arranged by pressure range depending on which configuration was being tested and on estimated pressure measurement levels. The actual transducer range used in each Scanivalve is presented in Table 7. After each transducer change, a check was made to ensure that there were no leaks.

DATA REDUCTION

Standard Langley Research Center methods were used to obtain local static pressures in psi, P_{n} .

The local static pressure coefficient for each orifice was calculated by:

$$C_{p_n} = (P_n - P_1)/q_1$$

The ratios of local static pressure to freestream static pressure upstream of the shock wave were calculated by:

$$PR_1 = P_n/P_1$$

The ratios of local static pressure to total pressure downstream of the shock wave were calculated by:

$$PR_2 = P_n/P_{t2}$$

The stagnation pressure coefficients were calculated by:

$$c_{p_{stag}} = (P_{t2} - P_1)/q_1$$

The ratios of local static pressure coefficient to stagnation pressure coefficient were calculated by:

$$c_{p_n}/c_{p_{stag}} = (P_n - P_1)/(P_{t2} - P_1)$$

If the data was from a component alone run, this equation provided the ratio of local static pressure coefficient undisturbed to stagnation pressure coefficient, $C_{p_u}/C_{p_{stag}}$. However, if the data was from an integrated component run, this equation provided the ratio of local static pressure coefficient interference to stagnation pressure coefficient, $C_{p_i}/C_{p_{stag}}$.

DATA REDUCTION (Concluded)

The ratios of local static pressure interference to local static pressure undisturbed were calculated by:

$$P_{1}/P_{u} = (P_{n1} - P_{1})/(P_{nu} - P_{1})$$

TABLE I.

ST : 1H4			DATE: 11/12/73
	TEST CON	IDITIONS	
		<u> </u>	<u> </u>
MACH NUMBER	REYNOLDS NUMBER	DYNAMIC PRESSURE	STAGNATION TEMPERATU
	(per ft x 10 ⁶)	(pounds/sq. inch)	(degrees Fahrenheit)
2.36	1.2	1.87	150
2.36	3.0	4.67	150
2.95	1.2	1.62	150
2.95	3.0	4.04	150
2.95	5.0	6.73	150
3.7	1.2	1.26	150
3.7	3.0	3.15	150
3.7	5.0	5.26	150
4.6	1.2	0.98	175
4.6	3.0	2.45	175
4.6	5.0	4.09	175
BALANCE UTILIZED:	NONE		· · · · · · · · · · · · · · · · · · ·
	CA DA CITVA	ACCURACY:	COEFFICIENT
	CAPACITY:	AUGURAUT.	TOLERANCE:
NF	 		
SF			
AF			
PM			
RM			
YM	<u> </u>	 	
COMMENTS: Press	ure Transducers acc	uracy +12% of rated	l load.
	•		

TEST: IA	1-4(UPWT 1059)			DATA	SET	/NE	il'NU	MBER	R COLL	ATIO	1 SUM	iARY		DATE:	3/	/31/	76	REVIL	5 5 6
DATA SET	CONFIGURATION			PARAL	1ETE	RS/V	ALUES		(l			ORALT	ERNAT	E INDE	PENDE	NT VA	RIABLE)	en reini Sireni In
DENTIFIER	A 17 15 M	<u>,</u>		Riv/L			<u> </u>	11	2.36	2.95		14.6 i			()=====	<u> </u>	<u> </u>	\	=
TO DE PIN	\$ + 715 + S8 N16	<u>-5</u>	}	1.2			<u> </u>	2	H		5	·{}-				}	 	 	-
	/ TAITED NAMED	0	0	1.2			 	4-	107	//5	6	30				ļ		 	
	(ZNTEGRATED	5	<u> </u>	1.2			<u> </u>	2	108	116				-	<u> </u>		<u> </u>	\ <u> </u>	4
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	WITH	-5	<u>. </u>	3.0			<u> </u>	2		 	8	20				<u> </u>	<u> </u>	 	\parallel
	PROTUBERANCES)	}	}	3.0			<u>} :</u>	4.	109	<u> </u>	9	121				<u> </u>	<u> </u>		TEST
		75	"———	3.0			ļ	<u>\$</u>	110	110	10	22				ļ	1	- 	
<u> Parked</u>		-5	<u> </u>	5,0				2			15	17					<u> </u>	ļ	a a a
		0	0	5,0			<u> </u>	3		///	16	10					<u> </u>	<u> </u>	NOME
		5	0	5.0				1		112								<u> </u>	HE MS
7@3 <u>X</u> AD		-5	-5	3.0				2			//	23				ļ	<u> </u>	<u> </u>	_ "
		O	-5	3,0				2			12	24					<u> </u>	<u> </u>	
Rabkae		-5	⊹5	3.0				2			13	25							_
	V	0	+5	3.0				2		i	14	26		[
								,											
NOTE;	RG3 XXX = M	nc	14	ALP.	HA TO	Co	/cps	"	æ (1 x y E	(=	MACH	A	LPHA	PI	PU	· ·	3=	<u></u>
1	MOBKXX = N	MG	H	ALD! BE			4	1	AGBK	X DA	ta se	TS ARE	RA	TIPED	หลอ	REE	Dara	SETS	, A
	ZŌ!	IARC	3)	ZDVN	સ્ક્ર))y		DES	CRIBE	D ON	PAGE	86		ţ		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		 }
TYPE OF DATA OR SCHEDU	B B ORBITER			elag e	2	С	OEFFI	CIENT	SCHEDI	ILES					IDV	AR (1)	IDVA	E (S)	NDI
ACTICUU	L = LOWER V = VERTICA T = EXTERN S = SOLIP RO	WI L AL	NG TAI	NK	FR												Section 1		

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TABLE II. (Continued).

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															7					1
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			10	٥	3.0				4-	51	59	74	89							1
			5	0	3.0				4-	49	58	7.3	88							1
			0	0	3.0				4	48	57	72	87							1
IN J. C.D.		·	-5	 	3.0				2			7/	86				<u> </u>			1
a37CB			-10		3.0				2	7,	•	70	85							- American
			20		1.2				4	47	64	69	104							1
	772	-1427	10	0	1.2			\vdash	4-	46	63	68	103							
•	Δ.	ONE) .	5	0	1.2				4-	45	62.	67	102							
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20.3V/h			-5	0	1.2				2			65	100							»-compe
		BERANCES)	J.	0	3,0 3,0				2			35 36	40				 		-	-
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TABLE II. (Continued).

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DATA SET	CONFI	GURATION			PARA	METE	RS/VAL	UES		1			OR AL	ERNA	TE IND	EPENDI	NT VA	RIABLE) 	er er er er er er
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			10	}	5,0				3		55	83	98			ļ	ļ			╝
			50	}	5.0				3		56	84	99		ļ	<u> </u>				_
<u> </u>	 		-5	<u> </u>	3.0				2			76	91							- 53
			0	<u>}</u>	3,0				2			77	92.			<u> </u>				И-
4037CE			-5	5	3.0				2			78	93	•						200
		Ý.	O	5	3.0				2		-	79	94							NOME
tabt da	7	LB	-5	0	1.2	Į			2			119	/33							III II
	CEKTE	RNAL	O	0	2.1				2			120	134							7
rabt db	TANK	ALONE)	-10	0	3.0		Î		2			121	127							
			-5	0	3.0				2			122	128			ļ				
			0	0	3,0				2			123	129							
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PASTOC			-5	0	5.0		-		2	$\neg \uparrow$		125	131			~				-
-		V .	o	0	5.0				2		Î	126	132							
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YPE OF DATA						····	COI	FFIC	ENT	SCHEDU	LES		· · · · · · · · · · · · · · · · · · ·			IDV	AR (1)	IDVAR	 : (2)	מא <u>ד</u>
O OR SCHEDU	-										•	Alexandra Very service	····		-					

72

TABLE II. (Continued).

	-4(UpwT 1059)	=4 					COLLATION		ARY		: 3/3/			<u>~</u>
DATA SET	CONFIGURATION	a a		RN/L	TERS/VA	OF.	2.36 2.95		4.6	NATEINU	EPENDEN	I VARIA	BLE !	T
POBSEA	(*) SB N16	To	() er e zze	1.2		1		141						
	(SRB	0	0	1.2		2		142	168					
	ALONE)	0	5	1.2		2		143	169					
RG3SEB		0	-5	3.0		2		144	156					
		0	O	3,0		2		145	157					THE STREET
		0	5	3,0		2		146	158					
		0	10	3,0		2		147	159					
RG3SEC		Ö	0	5,0		2		154	166 .					
	V	0	5	5.0		2		155	167					
735EF	(+4) S8 N16	0	-5	3.0		2		148	160					# 1
	(SRB ALONE,	0	٥	3,0		22		145	157					
	MODEL ROLLED)	0	5	3.0		2		149	161					
		0	10	3.0		2		150	162					
		0	20	3,0		2		151	163					
		0	40	3.0		2		152	164					
	A	0	48	3.0		ے		153	165					
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YPE OF DATA		V37/	9 L L @	ED S	o co	EFFICIENT	SCHEDULES				IDVAF	R (1) 1	IDVAR (2)	NE

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TABLE II. - (Concluded).

RESULTANT	
DATA SET	DATA SET/DATA SET
AQ3BAA	MQ3BAA/MQ3BCA
AQ3UAA	MQ3UAA/MQ3UCA
AQ3LAA	MQ3LAA/MQ3LCA
AQSVAA	MQ3VAA/MQ3VCA
AATEQA	MQ3TAA/MQ3TDA
AQ3SAA	MW3SAA/MQ3SEA
AQ3BAB	MQ3BAB/MQ3BCB
AQ3UAB	MW3UAB/MQ3UCB
AQ3LAB	MQ3LAB/MQ3LCB
AQ3VAB	MQ3VAB/MQ3VCB
AQ3TAB	MQ3TAB/MQ3TDB
AQ3SAB	MQ3SAB/MQ3SEB
AQ3BAC	MQ3BAC/MQ3BCC
AQ3UAC	MQ3UAC/MQ3UCC
AQ3LAC	MQ3LAC/MQ3LCC
AQ3VAC	MQ3VAC/MQ3VCC
AQ3TAC	MQ3TAC/MQ3TDC
AQ3SAC	MQ3SAC/MQ3SEC
AQ3BAD	MQ3BAD/MQ3BCD
AQ3UAD	MW3UAD/MQ3UCD
AQ3LAD	MQ3LAD/MQ3LCD
AQ3VAD	MQ3VAD/MQ3VCD
AQ3BAE	MQ3BAE/MQ3BCA
AQ3UAE	MQ3UAE/MQ3UCE
AQ3LAE	MQ3LAE/MQ3LCE
AQ3VAE	MQ3VAE/MQ3VCE

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B17		
GENERAL DESCRIPTION : Fraginge, 3 Con	figuration, Idght	weight Orbiter
per Rockwell Lines VL70-000139.		
MODEL SCALE: 0.010	···-	
DRAWING NUMBER VL70-000139		•
DIMENSIONS:	FULL SCALE	MODEL SCALE
Length - In.	1290.3	12.903
Max Width - In.	267.6	2.676
Max Depth - In.	244.5	2.445
Fineness Ratio	4.82175	4.82175
. Area – Ft ²	-	
Max. Cross—Sectional	386_67	0.03867
Planform		
Wetted		
Bose		

MODEL COMPONENT :CANOPY - C7		
GENERAL DESCRIPTION	3 per Rockwell 1	[ines
VL70-000139.		
MODEL SCALE: 0.010		
DRAWING NUMBER VI70-000139	**************************************	
		•
DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X ₀ =433 to X ₀ =670) in.FS	237.0	2.37
Max Width		-
Max Depth		***************************************
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

MODEL COMPONENT: <u>ELEVON - E22</u>	•	
GENERAL DESCRIPTION: 3 Configuration per W	Rockwell Ti	120
VL70-000139 data for (1) of (2) sides.	103 HOCK MELT DI	368
12/ 02 (20)		
Model scale: 0.010		
DRAWING NUMBER: VI.70-000139		•
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - It ²	205.52	0.02055
Span (equivalent) - In.	353.34	3 · 5334
Inb'd equivalent chord	114.78	1.1478
Outb'd equivalent chord	55.00	0.550
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.208	0.208
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	0_0	0.00
Trailing Edge	- 10.24	- 10.24
Hingeline	0.00	0.00
Area Moment (Normal to hinge line) -Ft	3 <u>1548.07</u>	0-00155

MODEL COMPONENT : PODY FLAP - F5	· · · · · · · · · · · · · · · · · · ·	
GENERAL DESCRIPTION 3 Configurat	on per Rockwell I	ines
VL70-000139		
MODEL SCALE: 0.010		
DRAWING NUMBER VI.70-000139		
DIMENSIONS:	FULL SCALE	MODEL SCALE
Length - In.	<u>84.70</u>	o_8470
Max Width - In.	267.6	2.676
Max Depth		
Fineness Ratio	•	
Area - Ft ²		
Max. Cross-Sectional	**************************************	-
Planform	140.00	0.0140
Wetted		
Base	38.0958	0.00380

MODEL COMPONENT: OMS Pods - My				
GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines VL70-000139,				
NOTE: M4 identical to M3, except intersection to fuselage.				
Model Scale = 0.010				
DRAWING NUMBER VL70-000	139			
DIMENSION:	FULL SCALE	MODEL SCALE		
Length - IN	346.0	3.460		
Max Width - IN	108.0	1.080		
Max Depth - IN	113.0	1.130		
Fineness Ratio				
Areo - FT ²				
Max Cross-Sectional				
Planform '				
Wetted				
Base				

MODEL COMPONENT	BSRM NOZZLES	- N ₁₆	-, And The Department of the				 ,
GENERAL DESCRIP	rion: 3 Configu	ration BSI	M Nozzles	per Rock	well L	lnes	
VL77-0000	36 and VL72-0000	88, Data :	for (1) of	(2) side	9	المعارفة والمعارفة و	ماسا الداسات فيصلموا
					;		
Model Sca	le = 0.010						
DRAWING NO.	VL72-000088 VL77-000036			•			
DIMENS IONS				FULL-SCAL	E	MODEL	SCALE
MACH NO.	Ordenia de la la propria de la refera	•	•		•		
DIAMETER D	EX \sim IN (@ $X_{ m T}$ =	1941)		178.5	-	1.78	5
DIAMETER D	T ~ IN				-		
DIAMETER D	in ~ in				_	, , , , , , , , , , , , , , , , , , ,	
on ∼ degr	EES	•			_		
AREA - FT	2			,			,
MAX CROS	S-SECTIONAL			173.78	-	0.017	38
GIMBAL ORI	GIN	• .	Χo	-	Yo		Zo
LEFT NO	ZZLE ~ IN FS	•	1738		-243		400
RIGHT N	OZZLE ~ IN FS		1738		+243		400
NULL POSIT	ION			PITCH	<u> </u>	MAY	
LEFT NO	ZZLE - DEG.			<u>+</u> 8°	- -	<u>+</u> 8°	<u> </u>
RIGHT N	OZZLE - DEG			<u>+</u> 8°	-	<u>+</u> 8°	

MODEL COMPONENT: RUDDER - R5		
GENERAL DESCRIPTION: Configuration 140A/B	Orbiter Rudder.	
		·
MODEL SCALE: 0.010 MODE	L DRAWING No.: S	S-A00148 RELEASE
DRAWING NUMBER: VL70-000146A		•
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - Ft ²	106.38	.0106
Span (equivalent) - In.	201.0	2.010
Inb'd equivalent chord- In.	91.585	0.916
Outb'd equivalent chord	50.833	0.508
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		•
Leading Edge	34.83	34.83
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Normal to hinge line)-Ft ³	526.13	0.0005

MODEL COMPONENT : BOOSTER SOLID ROCKE	r motor - se	
GENERAL DESCRIPTION Booster Solid Re	ocket, 3 Configur	cation. Body
of Revolution, Data for (1) of (2) side	es, per Rockwell	Lines VL77-000036
and VL72-000088		
MODEL SCALE: 0.010		
DRAWING NUMBERVL72-000088, VL77-00	00036	
DIMENSIONS:	FULL SCALE	MODEL SCALE
Length (Includes Nozzle) - In.		17.410
Max Width (Tank Dia.) - In.	142.0	1.420
Max Depth (Aft Shroud) - In.	205.0	2.050
Fineness Ratio	8.49268	8.49268
Area - Ft ⁻		
Max. Cross—Sectional	229.21	0.03505
Planform		**************************************
Wetted		****
Base	Control of the same and Subsequent to the same and the sa	
WP of BSRM Centerline ($\mathbf{Z}_{\mathbf{T}}$) - In.	400.0	4.00
FS of BSRM Nose (X) - In.	200.0	2.00

MODEL COMPONENT: External tank with pro-	tuberances, T15	
GENERAL DESCRIPTION: External oxygen-h	ydrogen tank; yehicl	e 3 Configuration
per Rockwell lines VL78-000041B and VL72-	-000088B. Model Sca	le = 0.010
DRAWING NUMBER: V172-000088B		
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length - In. (Nose @X _T =309)	1865	18.65
Max. Width (Dia.)-In.	324	3.24
Max. Depth		***
Fineness Ratio	5.756	5.756
Ārea — FT ²		
Max. Cross-Sectional	<u> 572.555</u>	0.057
Planform	·	
Wetted		
Base		
WP of Tank Centerline (X_m) In.	400.0	4.000

TABLE III. - Concluded.

MODEL COMPONENT: External Tank without pro	turbrances, T ₂₂	
GENERAL DESCRIPTION: External Oxygen-Hydrog	en Tank, Vehicle	3 configuration,
per Rockwell lines VL78-000041B and	V172-000088B	
Model Scale = 0.010		: .
DRAMING NUMBER: VL72-000041B VL72-000088B		
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length - In. (Nose $\mathbf{e}_{\mathbf{X}_{\mathbf{T}}}=309$)	1865	18.65
Max. Width (Dis.)-In.	324	3.24
Max. Depth		
Fineness Ratio	5.756	5.756
Area _ FT ²		
Max. Cross-Sectional	572.555	0.057
Planform		
Wetted	- COM-	
Base	CONTROL Completing to the state of the state	
WP of Tank Centerline (X_m) In.	400.0	4.000

MODEL COMPONENT: VERTICAL - V ₇		•
GENERAL DESCRIPTION: Centerline vertical tail,	doublevedge	sirfoil with
rounded leading edge.		
NOTE: Same as V5, but with manipulator housing r	emoved.	·
MODEL SCALE: 0.010		
DRAWING NUMBER: VL70-000139		
DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		•
Area (Theo) - Ft ² Planform Span (Theo) - In. Aspect Ratio Rate of Taper Taper Ratio Sweep-Back Angles, Degrees. Leading Edge Trailing Edge O.25 Element Line Chords: Root (Theo) WP Tip (Theo) WP MAC Fus. Sta. of .25 MAC W.P. of .25 MAC B.L. of .25 MAC	125 92 315 72 1.675 0.507 0.404 15 000 26.249 41.130 268.50 108.47 199.81 1463.50 635.522 0.000	0.04259 3.1572 1.675 0.507 0.404 45.000 26.249 41.130 2.6850 1.0847 1.9981 14.635 6.35522 0.00
Airfoil Section Leading Wedge Angle - Deg. Trailing Wedge Angle - Deg. Leading Edge Radius	10.000 14.920 2.000	10.000 14.920 0.020
Void Area - Ft	13.17	0.00132
Blanketed Area	0.00	_0.00

MODEL COMPONENT: WING-WIGS		
PENERAL DESCRIPTION: Configuration 3 Orbiter per I	ines VI70-0001	39.
NOTE: Same planform as Work except dihedral at Tra	iling Edge.	•
MODEL SCALE: 0.010		
TEST NO.	DWG. NO. VI	70-0001.39
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area (.neo.) Ft2 Planform Span (Theo.) In. Aspect Ratio Rate of Taper Taper Ratio Dihedral Angle, degrees Incidence Angle, degrees Aerodynamic Twist, degrees Sweep Back Angles, degrees Leading Edge Trailing Edge O.25 Element Line Chords: Root (Theo) B.P.O.O. Tip, (Theo) B.P. MAC Fus. Sta. of .25 MAC W.P. of .25 MAC W.P. of .25 MAC B.L. of .25 MAC EXPOSED DATA Area (Theo) Ft2 Span, (Theo) In. BP108 Aspect Ratio Taper Ratio Chords Root BP108	2690.00 936.68 2.265 1.177 0.200 3.500 3.000 +3.000 -10.24 35.209 689.24 137.85 474.81 1136.89 299.20 182.13 1752.25 720.68 2.058 0.2451	0.2690 9.3668 2.265 1.177 0.200 3.500 3.000 ± 3.000 ± 3.000 - 10.24 35.209 6.8924 1.3785 4.7481 11.3689 2.9920 1.8213 0.1752 7.2068 2.058 0.2451
Tip 1.00 <u>b</u> MAC Fus. Sta. of .25 MAC W.P. of .25 MAC B.L. of .25 MAC Airfoil Section (Rockwell Mod NASA) XXXX-64	137.85 393.03 11.85.31 300.20 251.76	1.3785 3.9303 11.8531 3.0020 2.5176
Root b =	0.10	0.10
Tip $b = 2$	0.12	0.12
Data for (1) of (2) Sides Leading Edge Cuff 2 Planform Area Ft ² Leading Edge Intersects Fus M. L. @ Sta Leading Edge Intersects Wing @ Sta 38	120.33 560.0 1035.0	0.01203 5.600 10.350

TABLE IV. - ORIFICE LOCATIONS.

26-OTS Orbiter LREF = 1290.3

Pressure Bottom Ce	Tap Locat	ions	$\frac{\text{Bottom Su}}{\text{B.P} = -50}$	rface	s.)	
Orifice			Orifice			
No.	X\T	X _o (F.S.)	No.	X/L	X _o _	
1	0	238.00	33	. 20	496.060	
2	.005	244.452	34	.30	625.090	
3 4	.020 .040	263.806 289.612	Windshiel	ld Left	: Side	
4 5 6 7	.060	315.418				
6	.080	341.224	30		er of forwar	
7	.100	367.030	31		er of obliqu	
8 9	.150 .2 0 0	431.545 496.060	32	Cente	er of aft w	Indow
10	.300	625.090	Oross Se	ntions	(Left Side)
1.1	.400	754.120	V			4
12	.500	883.150	Orifice	1-		
13	.600	1012.180	No.	X/Γ	$X_0(F.S.)$	
14 15	.800 .950	1270.240 1463.785	35	.10	367.030	Ø = 10°
16	•975	1496.043	36 36	•=9	307.030	δ ₁ = 50 ₀
17	1,000	1528.300	37			CCL Tangent
18	1.025	1560.558	30			HHB Tangent
19	1.050	1592.815	36	• 2 ~	496.060	CCL Tangent
Top Cente	rline ·		40 41			∮ = 35° ∅ = 40°
.00 001.00	<u> </u>		42			$p = 50^{\circ} (2=320)$
Orifice			43			Ø=96.3 (Z=410)
<u> </u>	X/L	X _o (F.S.)	1,4,	-30	625.090	$\emptyset = 33.1 \ (v_0 = 75)$
20	.050	302.515	. 45 46			Ø = 40 Ø = 45
21 21	.100	367.030	47			$\emptyset = 57 (Z=330)$
22	.125	399.288	7,0			?=60.9 (:=340)
23	.150	431.545	49			∕=65 (2=350)
24	.160	444.448	5.7			Ø=69 (Z=360)
25 26	.170 .180	457.351 470.254	51 52			Ø=95.7 (Z=410) Ø = 135
27	.200	496.060	53	. 60	1012.180	Ø=79.3 (Z=380)
28	.300	625.090	54			Ø=95.5 (Z=410)
29	.600	1012.180	55 56			Ø=103 (Z=425)
			56 57			Ø=112.6 (Z=440)
			57 58	.80	1270.24	Ø=135 Ø=95.5 (2=410)
			59		1496.043	Ø=51.6 (Z=300)
		100	60			Ø=68.0 (Z=350)

<u>26-OTS Orbiter</u> - Continued <u>0.010-Scale</u>

OMS Pods (Left Side)

Orifice	X/L	X _O FILL	YoFULL	ZoFULL	ø°
61	.780	1245	-95	474	127.9
62	.805	1276	-105.5	488	129.5
63	.829	1307	-117.0	498.7	130
64	.862	135C	-126.5	506	130
65	.963	1480	-134.5	513	130
66	.829	1307	-95.0	511	139.6
67	. 963	1480	-95.0	530	144
68	.829	1307	-124.5	474	120.8
69	.963	1480	-142.5	474	117.5
70	1.000	1528.3	-142.5	474	117.5
71	1.0145	1547	Rottom o	f PCS	

Left Wing Bottom Surface

<u>5/2</u>	Orifice No.	X/L	X/C	XoFULL
<u>**/ **</u>	-		+ = = = = = = = = = = = = = = = = = = =	
•25	72	.40	•153	754.120
_{o=117.085}	73	.50	•299	883.150
7 =886.0	74	.60	. 44,4 72.4	1012.180
KolT=618.5	75	.80	.736	1270.240
.40	76	•592	.025	1002.063
₀ =187.336	77	.600	.045	1012.189
0=502.5	7 8	.660	.200	1090.000
XoLE=989.5	79	.700	.302	1141.210
	80	.80	.559	1270.240
	81	•933	900	1441.750
.50	83	.651	.025	1077.913
70=234.170	83	.700	.177	1141.210
0=416.5	84	.800	.487	1270.240
%oLF=1067.5				
.60	85	.708	.100	1152.000
Y ₀ =281.004	86	.800	.428	1270.240
C=360.0	87	.845	.600	1332.000
X ₀ IE=1116.0	88	.876	.700	1368.000
•	- 89	. 904	.800	1404.000
	9 0	.918	.850	1422,000
	91	.932	. 900	1440.000

TABLE IV. - Continued.

<u>26-OTS Orbiter</u> - Continued <u>0.010-Scale</u>

<u>Left Wing Bottom Surface</u> - Continued

<u>b/2</u>	Orifice No.	X/L	<u>x/c</u>	X _O F'JLL
.75 Y _o =351.255 S=277.0 X _c LT=1186.5	92 93 94	.740 .800 .928	.025 .302 .900	1193.425 1270.240 1435.800
.85 Y _o =398.089 C=222.0 X _o lE=1233.0	95	.788	.100	1255.2
.95 Y ₀ =444.923 C=158.5 X ₀ IE=1288.0	96 97	.826 .924	.10 .90	1303.850 1430.650
.99.8	98	.90	O-LE	1398.95

Leading Edge (Left Wing) Rolled Down 30°

b/2	Orifice No.	X/L	x _o	
.30106 .34803 .50	99 100 101 102 to 107	.40 .50 .643	LP Rolled 30° HE Polled 30° HE Polled 30° A - Sec Sketch	myori
.75 .85	108 109 to 114	-	III Polled 30° 3 - See Sketch	Dovm

<u>26-0TS Orbiter</u> - Continued <u>0.010-Scale</u>

Right Wing Top Surface

<u>5/2</u>	Orifice	X/L	<u>x/c</u>	XoFULL
.40 Y _o =187.336 C=502.5 X _o IE=989.5	115 116 117	.602 .660 .816	.05 .20 .60	1014.625 1090.000 1291.000
.60 Y _o =281.004 0=360.0 Y _o IX=1116.0 .80 Y _o =374.672 C=187.3 Y _o IX=1209.5	118 119 120 121 122 123 124	.736 .848 .904 .932 .946 .782 .884	.20 .60 .80 .90 .95 .20	1188.000 1332.000 1404.000 1440.000 1458.000 1246.960 1378.070

Vertical Tail (Left Side)

Orifice	7./ov	20_	<u> 10</u>	<u> </u>
125	.299	594.34	L.T.	0
126 .	. 299	594.34	1438.2	•30
127	.299	594.34	1570.5	.90
128	. 53∂	667.9	L.J.	C
129	•532	667.9	1500.8	•3∩
130	.532	667.9	1537.0	.50
131	.532	667.9	1585.5	.70
132	.532	667.9	1611.0	•90
133	.765	741.49	L.T.	0
134	.765	741.49	1563.8	.30
135	.765	741.49	1651.2	.90
136	.905	785.6	L.E.	Q

TABLE IV. - Continued.

26-OTS

External Tank - 0.010-Scale LT = 2174-309 = 1865 F.S. = 18.650 M.S.

Orifice	<u>X/L</u>	<u> </u>	X _{ES.}	X _{MS}
501	. 04	0° 0°	74.60 149.20	0.746
502 503	.08 .15	0°	279.75	2,7975
504	.40	0°	746.00	7.460
505	.60	0°	1119.00	11.190
506	.80	0°	1492.00	14.920
507	.40	45°	746.00	7.460
508	.60	45°	1119.00	11.190
509	.80	45°	1492.00	14.920
510	•90	45° 67.5°	1678.50 559.50	16.785 5.595
511 512	.30 .35	67.5°	652.75	6.5275
513	.40	67.5°	746.00	7.460
514	.50	67.5°	932.50	9.320
515	.60	67.5°	1119.00	11.190
516	.65	67.5°	1212.25	12.1225
517	.70	67.5°	1305.50	13.055
518	.75	67.5°	1398.75	13.9875
519	.80	67.5°	1492.00	14.920
520	.90	67.5°	1678.50	16.785
5.21	.20 .25	90°	373.00 466.25	3.730 4.6625
522 523	.275	90°	512.875	5.12875 5.5950
524	.30	90°	559.50	6.06125
525	.325	90°	606.125	
526	.35	90°	652.75	6.5275
527	.40		746.00	7.460
528	.45	90°	839 . 25	8.3925
529	.50		932.5^	9.3250
530	•55	90°	1025.75	10.2575
531	•60		1119.00	11.190
532	.65	90°	1212.25	12.1225
533	.70		1305.50	13.0550
534	.75	90°	1398.75	13.9875
535	.80	90°	1492.00	14.9200
536	.85		1585.25	15.8525
537	.90	90°	1678.50	16.7850
538	.275	112.5°	512.875	5.12875
539	.30	112.5°	559.50	5.5950
540	.325	112.5°	606.125	6.06125
541	•35	112.5°	652.75	6.5275
542	•40	112.5°	746.00	7.460
543	•45	112.5°	839.25	8.3925
544	•50	112.5°	932.50	9.3250

 $\psi)$

TABLE IV. - Continued.

26-OTS - Continued

Orifice No.	₹∖ŗ	Θ .	Xes	<u>X</u> MS
	X/L .566505050505050505050505050505050505050	112.5° 112.5° 112.5° 112.5° 112.5° 112.5° 112.5° 112.5° 112.5° 123° 123° 123° 123° 123° 135° 135° 135° 135° 135° 135° 135° 13	XES 1025.75 1119.00 1212.25 1305.50 1398.75 1492.00 1585.25 1631.875 1678.50 1725.125 1790.40 606.125 652.75 699.375 746.00 839.25 1398.75 1119.00 1212.25 1305.50 1398.75 746.00 792.625 885.875 932.50 1025.75 1119.00 1212.25 1678.50 1743.775 746.00 792.625 885.875 932.50 1025.75 1119.00 1212.25 1305.50 1743.775 746.00 792.625 1678.50 1792.625	10.2575 11.1900 12.1225 13.0550 13.9875 14.920 15.8525 16.7850 15.88625 16.31875 16.31875 16.31875 16.31875 16.31875 16.31875 16.31875 16.31875 16.31875 17.9040 6.5275 6.99375 7.460 8.3925 9.3250 10.2575 11.190 12.1225 13.9875 14.920 15.8525 16.7850 17.43775 7.92625 16.7850 17.92625 16.7850 17.92625 16.7850 17.92625 16.7850 17.92625 16.7850 17.92625 16.7850 17.92625 17.92625 17.92625
588 589 590	.50 .70 .90	166° 166° 166°	932.50 1305.50 1678.50	9.3250 13.0550 16.7850

TABLE IV. - Continued.

<u>26-CTS</u> - Continued

Orifice No.	ΧŢΤ	ĕ	X _{FS}	XIS.
No. 592 5995 5990 600 600 600 600 601 23 456 612 890 622 826 628 628	.40 0.005 .01 .08 .15 .25 .37 .425 .425 .425 .55 .57 .57 .57 .57 .57 .57 .57 .57 .5	167° 180° 180° 180° 180° 180° 180° 180° 180	746.00 9.325 18.65 74.60 149.20 279.75 373.00 466.25 559.50 652.75 746.00 792.625 839.25 979.125 1072.375 1119.00 1212.25 1305.50 1398.75 1492.00 1585.25 1678.50 1747.505 1818.375 149.20 1747.505 1818.375 149.20 1747.505 1818.375 149.20 1747.505 119.00	7.4600 0.09325 0.1865 0.7460 1.4920 2.7975 3.730 4.6625 5.59575 7.4625 8.85875 9.3250 9.72575 10.72375 11.1900 12.1225 13.0550 13.9875 14.920 15.8525 16.7850 17.47505 16.7875
628 629	.60 .80	210° 210°	1119.00 1492.00	11.1900 14.9200
625 626 627 628	.90 .15 .40 .60	197° 210° 210° 210°	1678.50 279.75 746.00 1119.00	16.7850 2.7975 7.4600 11.1900
633 634 635 636 637	.70 .335 .40 .60	220° 225° 232° 232° 232°	1305.50 624.775 746.00 1119.00 1492.00	13.0550 6.24775 7.4600 11.1900 14.9200

TABLE IV. - Concluded.

26-OTS Solid Rocket Motor 0.010-Scale

Orifice No.	X/L	Ľ°	X _{s(FULL)}	Orifice No.	X/L	<u>y °</u>	X _s (FULL)
سے صدے ہے رکیا۔	-	. 4.4					- STOLLE
701	.00	90	200.000	735	.900	225	1708.400
702	.025	90	241.900	736	•930	225	1758.680
703	.050	90	283.800	737	.960	225	1808.960
704	.100	90	367.600	73P	•990	225	1859 , 240
705	.400	90	870.400	739	-930	240	1758.680 Skirt
706	.700	90	1373.200	740	.960	240	1808.960 Thin amount
707	.780	90	1498.0	741	.990	240	1077.2407
708	800	90	1540.800	742	.300	247.5	702.800
709	.930	90	1758.680	743	.400	247.5	870.400
710	.990	90	1859.240	744	.500	247.5	1038.000
711	.050	180	283.800	745	.600	247.5	1205.600
712	.100	180	367.600	746	.700	247.5	1373.200
713	.200	180	535.200	747	.115	260	392.740
714	.400	180	\$70.400	74A		270	(45° RL from nose radius)
715	.600	180	1205.600	749	.025	270	241.900
716	.700	180	1373.200	750	.050	270	283.800
717	.780	180	1498.0	751	.075	270	325.700
718	.800	180	154C.800	752	.100	270	367.600
719	.900	180	1708.400	753	.110	270	384.360
720	.930	180	1758.680	754	.130	270	417.880
721	.960	180	1808.960	755	.150	270	451.400
722	.990	1.80	1859.240	756	.200	270	535•200
723	.910	210	1725.160]	757	.300	270	702.800
724	.920	210	1741.920 Cn	758	.400	270	870.400
725	.930	570	1758.680 Skirt		.500	270	1038.000
7:26	•950	210	1764.440 > Dia-	76 0.	.600	270	1205.600
727	.925	27.5	1.736.42 gram	76:	.700	270	1373.200
~28	•940	215	1775 440	46.5	.780	270	1498.0
729	.960	215	1808.960	763	.800	270	1540.800
730	.150	225	452.400	764	•900	270	1708.400
731.	$I_{\mathbf{k}} \subseteq \kappa$	2.25	- 877.400	765	•930	270	1758.680
722	.401	225	1205.600	766	.990	270	1.859.240
733	.780	225	1498.0	767	•300	31.5	702,800
734	.800	225	1540.800	76e	.700	315	1373.200

TABLE V.
ORIFICE VS VALVE-PORT

			OKTATOR A					
Orifice	Valve	Port	Orifice	Valve	Port	Orifice	Valve	Port
1	12	4	41 42	10	17	81	10 2	10
1 2 3	12	4 5 6	42	10	18	82	10	28
	12	6	43	4	4	83	6	33
] 4	12	7	44	10	19 20	84	6	8
5 6	12	8	45	10	20	85	8	. 9
6	10	7 8 4 5 6	46	10	21	86	6 6 8 6 2 2 2 2 10 6 2	33 8 9 9
7 8	10	5	47	4	5 6	87	0	10
8	10	6	48	4	0	88	~	11 12
9	10	7	49	4	7 8	89 90	2	72
10	10	8	50	4	8	90	2	13 14 29 34 15 30
11	6 6	28 45 45 6 78 9 45 6	51	4	9 10	92	10	20
12	6	4	52 53	4	10	93	4	31.
13	0	2	22	4	12	94	2	15
14	2	4 E	54 55 56	4 4	13	95	10	30
15 16	2	2	22	4	17 14	96	0.5	31
10	2	7	57	4	14	97	10 4	2/1
17 18	2 2 2 2 2 2 7	ę.	58	4	1.5 16	98	10	31 24 32 33 34 35 9 22 23 10
19	2	0	50	4	10	99	10 10 10 10	33
20	7	7 1.	59 60		17 18	100	10	34
20	7	4 5	67	4 7 7	7	101	10	35
21 22	קי	6	61 62	'	7 8	102	12	9
23	7 7 8 8 8 8 8	10	63	7	9	103	10	22
24	φ	11	64	7 7	9 10	104	10 10 12 12 10	23
25	g	12	64 65 66 67 68	4	19	105	12	10
25 26 27 28	g d	13	66	$\overset{\pm}{7}$	ii	106	12	11
20	ø	14	67	4	20	107	10	24
20	1		68	$\overline{7}$	12	108	12	24 12
29	า	5	69	4	21	109	12	13
30	, <u>x</u>	75	70	4	22	iió	6	35
31	1 8 8 8 10	4 5 15 16	71	4	23	111	12 6 6	13 35 36
32	ø	17	72	10	25	112	12	14
33	10	-1	73	6	29	113	10	36
34	10	9 10	74	6	29 30	114	6	37
25	10	11	75	10 6 6 6	6	115	8	14 36 37 18
35 36	10	12	75 76	10	26	116	ĺ	6
37	10	13	77	10	27	117	ī	7
38	10	14	78	6	31	118	ī	8
39	10 10		79	š	32	119	ī	9
40	10	15 16	79 80	6	7	120	1 1	10
40		<u></u> U		J				
	·		<u> </u>					

TABLE $V_{\rm c}$ - Continued.

ORIFICE VS VALVE-PORT

121 122 123 124 125 126 127			ORIFICE VS					
122 123 124 125 126 127 128 129 130 131 132 133 134	alve	Port	Orifice	Valve	Port	Orifice	Valve	Port
123 124 125 126 127 128 129 130 131 132 133 134	PLUG		521	1	23	561	9	27
124 125 126 127 128 129 130 131 132 133 134	1 1 1	12	522	9	8	562	9	28
125 126 127 128 129 130 131 132 133 134	1	13	523	9	9	563	999933333335	29
126 127 128 129 130 131 132 133 134		14	524	9	10	564	9	30
127 128 129 130 131 132 133 134	12	15	525	9	11	565	9	31
128 129 130 131 132 133 134 135	2 2	16	526	9 9 9	12	566	3	30
128 129 130 131 132 133 134 135 136	_2	17	527	9	13	567	3	31
130 131 132 133 134 135 136	12 2 2 2 2 12 2 12	16	528	9	14	568	3	32 33 34 35
131 132 133 134 135 136	2	18	529	9	15	569	3	33
132 133 134 135 136	2	19	530	9	16	570	3	34
132 133 134 135 136	2	20	531	3 P L U G	10	571	3	35
134 135 136	2	21	532			572	3	36
135 136	TS.	17	533	3	12	573	_5	4
136	2	22	534	3	13	574	11	4
סכב	~ 10	23 18	535	3	14	575	11	5
	14	ТО	536	3 3 3 3 9	15	576	11 11	4 5 6 7 8
			537	2	16	577	11	7
			538 530	9	17	578	11	8
			539	9	18	579	11	9
501.	7	13	540 547	9 9	19	580 583	11 55555555511	9 5 6
502	7	14	<i>5</i> 41	9	20	581	2	
503	ĺ	15	542 51.3	7	21	582 582	2	7 8
504	ì	16	543 51.1	9 9	22	583	۶	R
505	1	17	544 51.5	9	23	584 587	2	9
506	i	18	545 51.6	7	24 17	585	2	10
507	ì	19	546 547	3333333	18	586	2	11
508	i	20	548	2	19	587	11	10
509	î	21	549	2	20	588 589	11	11
510	ī	22	550	ړ	20 21	590	5 P L U G	12 G E D
511			551	ر ع	22	591	11	
512	á	4 5 6	552	ر ء	23	592	12	12 19
513	á	6	553	PLUG	Gão	593	12	20
514	ģ.	7	55).	1 2 2	25	594	12	21
515	á	4	555	3	26	595	7	15
516	<u> </u>	5	554 555 556	3	27 27	596	7	16
517	3	6.	557	3 3	28	597	i I	37
518	3	7	558	PLUG	त ज र	598	3 3	38
519	3	7	559	9	25	599	11	13
520	9999333333	9	560	ģ	26	600	ii	14
-	_		/		~ ~			

TABLE \dot{V}_{i} - Concluded.

ORIFICE VS VALVE-PORT

Orifice	Valve	Port	Orifice	Valve	Port	Orifice	Valve	Port
601 602 603 604 605 606 607 608 609 611 613 614 615 616 617 618 621 622 623 624 626 627 628 629 631 632 633 634 636 637	11 11 11 11 11 5 5 5 5 5 5 5 5 5 7 3 11 1 5 5 5 5 11 1 5 11 5 5	15 16 17 18 19 20 12 21 21 21 21 32 24 40 27 28 29 29 30 31 30 30 30 30 30 30 30 30 30 30 30 30 30	701 702 703 704 705 706 707 708 709 710 712 713 714 715 716 717 718 719 720 721 725 726 729 730 731 732 733 736 737 738 739 740	12 5 5 5 1 1 2 7 7 1 1 1 9 6 L 6 2 2 7 8 8 7 8 8 8 8 8 8 8 8 12 6 6 2 2 7 8 8 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	13 25 26 20 4 5 19 21 22 23 24 25 27 15 29 22 26 27	741 742 744 744 745 746 749 751 752 753 756 761 762 764 768	7 6 6 6 12 11 11 12 12 12 12 12 12 17 7 0 6 6	23 16 17 18 19 20 31 34 35 33 32 22 23 24 25 37 25 27

TABLE VL VALVE-PORT VS ORIFICE NUMBER

	VALVE						
PORT	1	2	3	4	5	6	
456789011231456789011231456789012222222223333333333334567890	28 29 116 117 118 119 120 122 123 124 503 504 505 506 507 508 509 510 521 706	14 15 16 17 18 19 81 88 89 90 91 94 126 127 129 130 131 132 134 135	515 516 517 518 519 520 531 533 534 535 536 537 548 549 551 552 554 555 567 568 570 572 598 626	43 47 48 49 50 51 52 55 55 57 58 60 67 70 70 97	573 580 581 582 583 584 585 586 589 611 612 613 614 615 616 617 618 624 625 629 630 633 636 704 702	12 13 75 80 84 86 87 714 716 731 743 744 745 757 758 759 760 761 73 74 78 79 83 93 110 111	

TABLE VI. - Concluded. VALVE-PORT VS ORIFICE NUMBER

			ALVE			
PORT	7	8	9	10	11	12
4	20	720	511	6	574	1
56 7 8 9 10 12 13 4 15 6 17 8 19 20 1 22 22 24 25 6 27 8 9 30 3 23 33 35 36 37 8 39 40 40 40 40 40 40 40 40 40 40 40 40 40	21 22 61 62 63 64 66 68 502 595 620 719 722 735 741 765	721 739 740 85 23 24 25 26 27 30 31 32 115 723 724 725 726 727 728 737	512 513 514 522 524 525 526 527 528 539 542 543 5445 563 563 563 756	7 8 9 10 33 34 35 37 8 39 41 44 45 46 31 107 76 77 8 9 9 9 9 9 100 113 113	575 576 577 578 579 588 591 599 601 602 603 604 606 609 610 622 631 632 631 712 749 751	2 3 4 5 102 105 106 108 109 112 125 128 133 136 592 593 701 707 708 717 708 717 718 730 733 747 748 755 762 763

TABLE VII. - S-V CONFIGURATION VS TRANSDUCER

TRANSDUCER LOCATION

TRANSDUCER	RATED LOAD-PSIA
Ā	5
В	5
C	5
D	5
E	5
F .	10
G	10
H	10
I	15
J	15
К	15
L	1 5

CONFIGURATION VS TRANSDUCER

VALVE												
CONFIG.	1	2	3	4	5	6	7	8	9	10	11	12
I.V.	A	B	С	D	E	F	G	Н	I	J	K	L
ORB.	A	В	*F	D	% Е	С	G	н	*I	J	*K	L
TANK	A	*I	C	₩K	E	⊁ F	G	*H	В	₩J	D	L
SRB	A	*I	*F	₩K	E	С	G	Н	В	*.ј	D	L
							á					i

^{*}Not used for this configuration

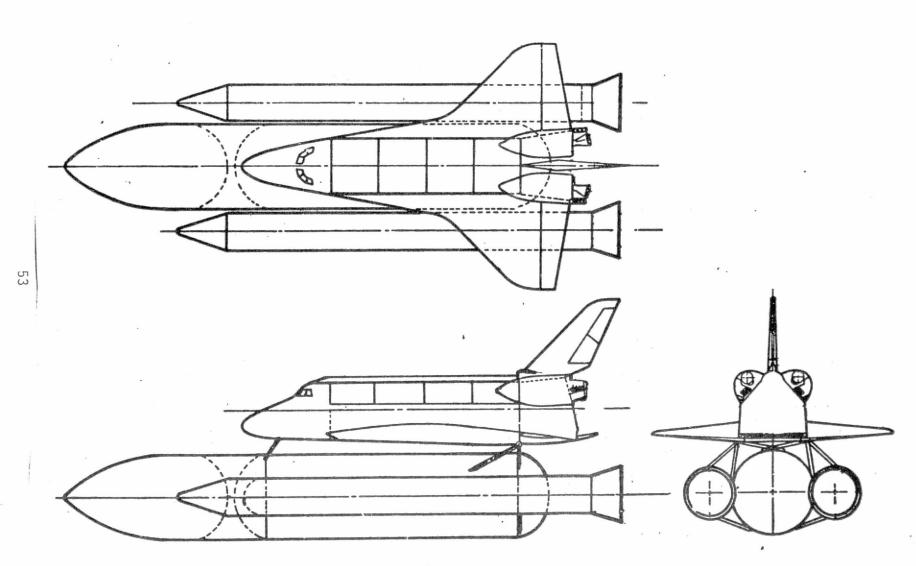
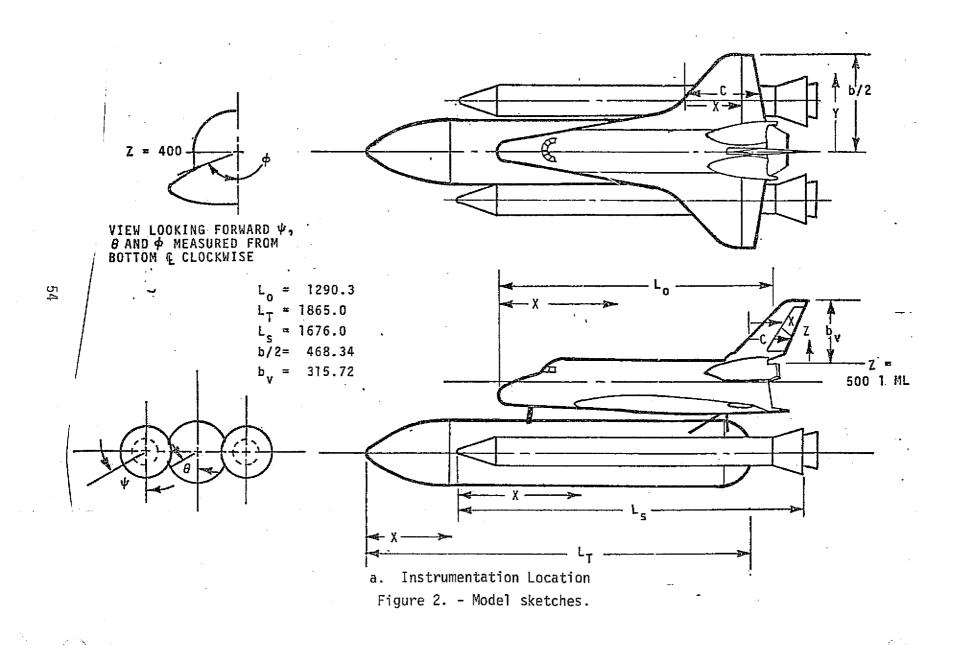
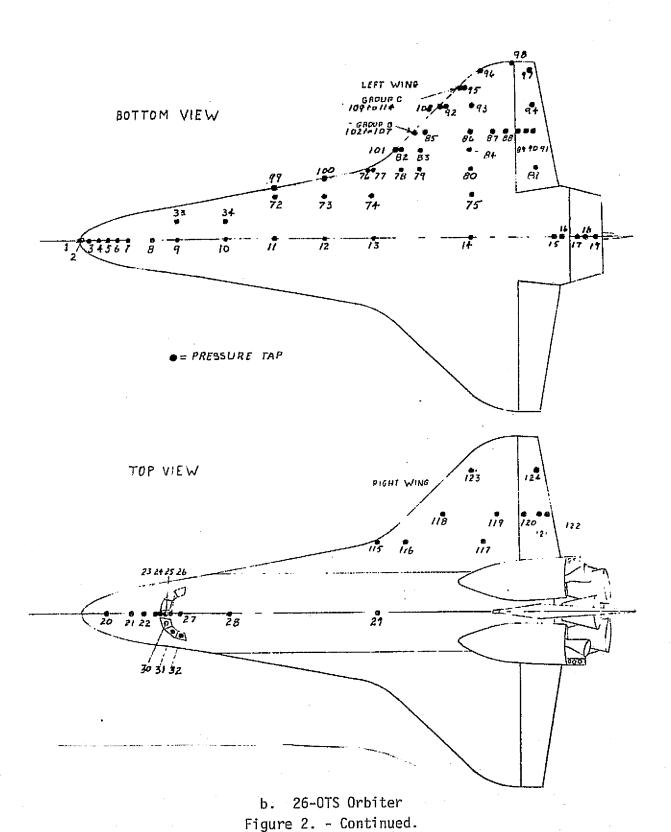
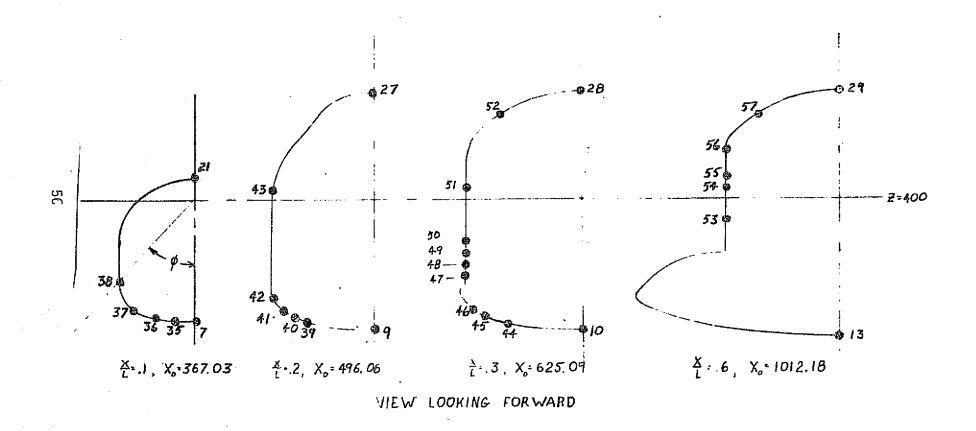


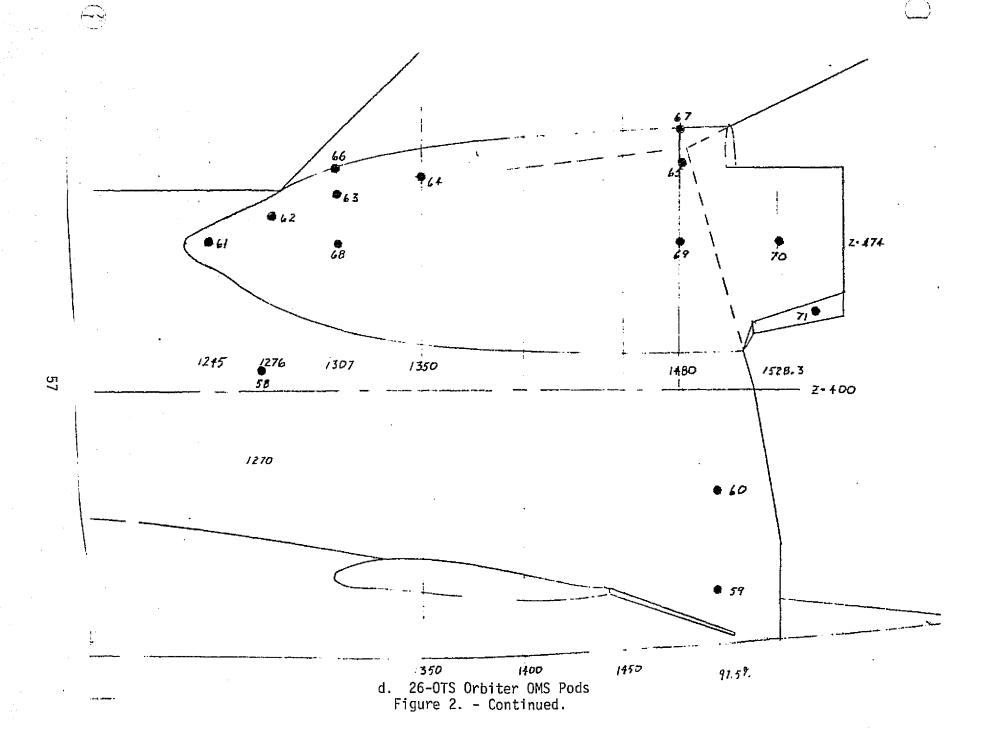
Figure 1. - Integrated Vehicle General Arrangement.







c. 26-OTS Orbiter Fuselage Cross-SectionFigure 2. - Continued.



 $\frac{Y/b}{2} = .30106$.60 .75 .85 .34863 .50 TRUE LEADING EDGE LEADING EDGE AT <= 30° GROUP B OUTBOARD GROUP A INBOARD 112 | 108 1 109 101 100 102 113 106 BOTTOM SURFACE

TOP SURFACE

e. Left Wing Leading Edge

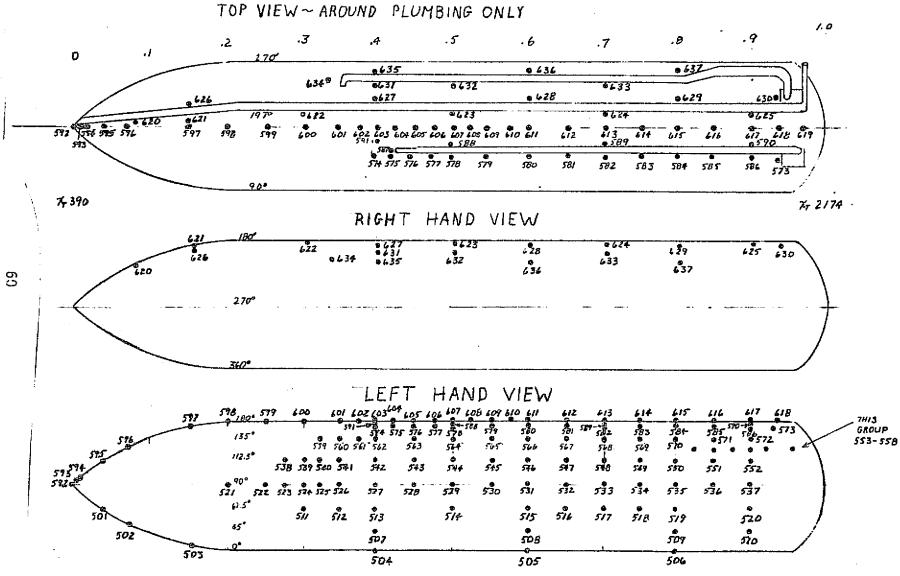
LOOKING AFT

*NOT TO SCALE

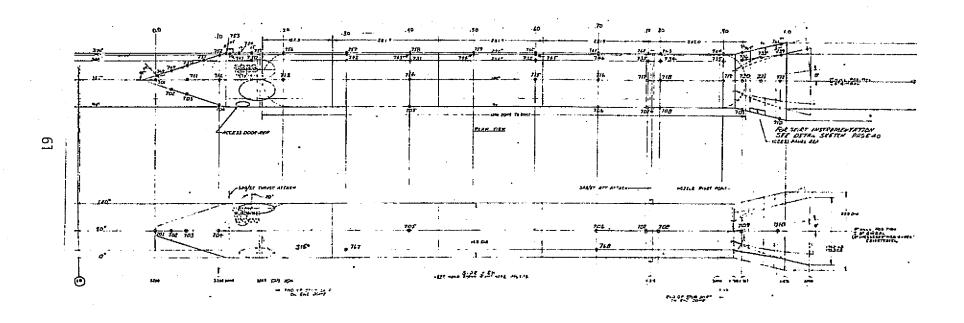
 e. Left Wing Leading Edy Figure 2. - Continued. 136
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133

f. 26-OTS Vertical Tail Figure 2. - Continued.

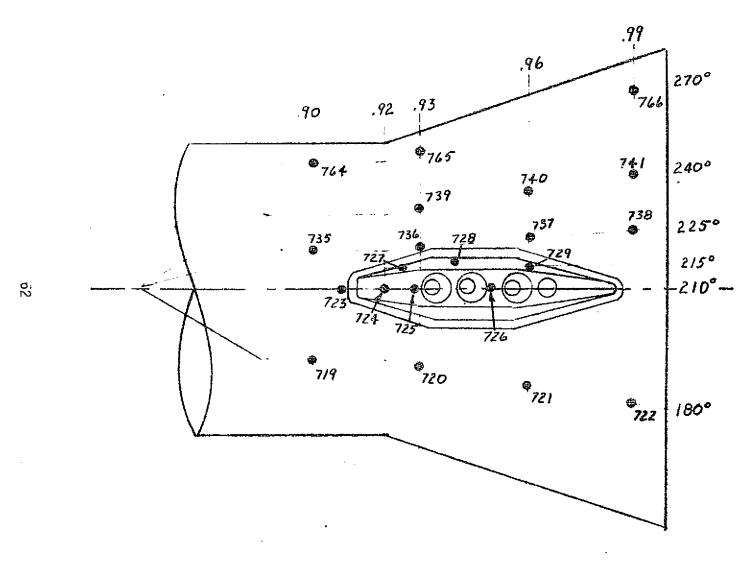
z=500 (IHL)



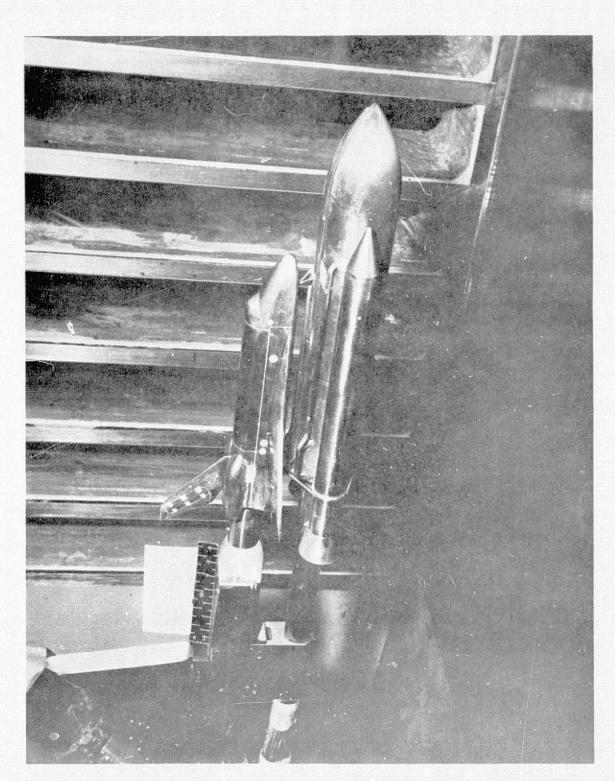
g. 26-OTS ET Pressure Tap Locations Figure 2. - Continued.



h. 26-OTS SRB Pressure Tap Locations Figure 2. - Continued.

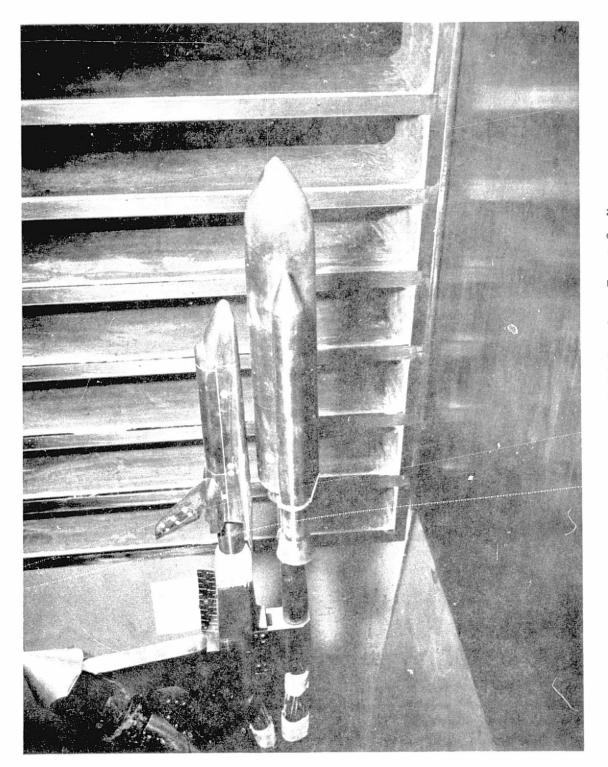


i. 26-OTS SRB Skirt DetailFigure 2. - Concluded.



a. Integrated Vehicle, 0₁ + T₁₅ + S₈ N₁₆ Figure 3. - Model photographs.

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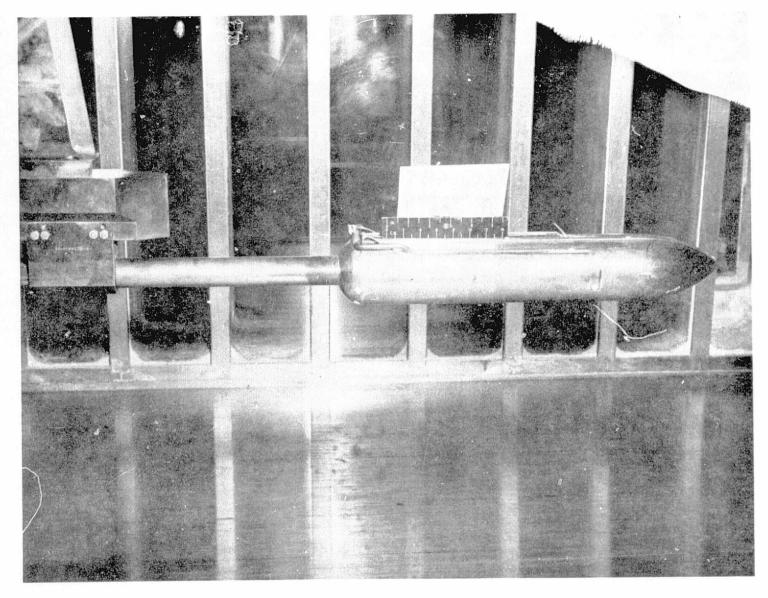
b. Integrated Vehicle, 0₁ + T₂₂ + S₈ N₁₆ Figure 3. - Continued.



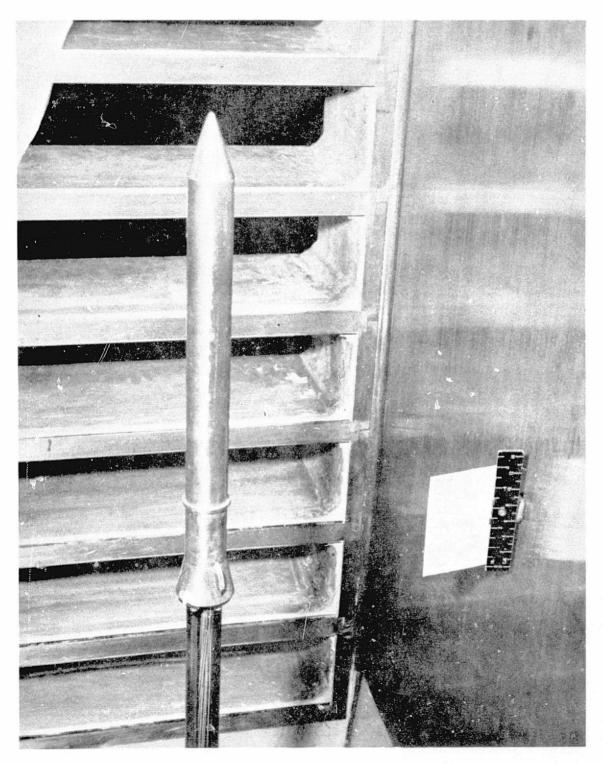
c. Orbiter, O₁

Figure 3. - Continued.

0



d. External Tank, T₁₅
Figure 3. - Continued.



e. Solid Rocket Booster, S_8 Figure 3. - Concluded.

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APPENDIX
TABULATED SOURCE DATA

Tabulations of plotted data are available on request from ${\tt Data}$ ${\tt Management}$ ${\tt Services}$.

	DATE 20 A	PR 76		TABULAT	ED SOURC	E DATA -	IH4								PAGE	1
					UPi	NT 1059 (1	H4) 01-	15-S8N16	ORBITER	R FUSEL	AGE		(RQ3)	(AA	15 APR	76)
		REFE	RENCE DA	TA									PARAMETR:	C DATA		
	LREF =	2690.0000 1290.3000 1290.3000	INCHES	7 77	۰ .	.0000 INCH .0000 INCH .0000 INCH	ES				. RN	/L =	1.200	BETA	u	.000
	MACH (1) = 2.	360 AI	LPHA (1) =	.000 PI	NF =	.48020	Q(PSI)	= 1.	8721	RN/L	= 1.2000) CP	STG =	1.7063
	SECTION	(1)ORBIT	ER FUSEL	AGE	•	DEPENDEN	T VARIA	ELE CP/CF	rs .							·
	X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	. 1000	.1250	1500	. 1600	. 1650	.1700	.1750	.1800
	PHI .000 10.000 20.000 24.500 39.000 163.000	.9259	.5281	.2690	.3214		.2496	.2303	.7977 .2542 .1291 .1353 .1244		0166				.3758	
	174.000 180.000	.9259				.2223			,1796	.1840	.2154	.5782	.6202	.5970	75.55	.5272
	X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
•	PHI .000 23.000 24.000 31.500 33.100 35.000	.0424 .0345 .0366	.0361 .0147	0096	0294	.0120		.2737				0915		1106	!087	
	40.000 45.000 50.000 51.600 57.000 60.900	.0147	0052 0119 0083 0137									-		.0051	•	
	65.000 68.000 69.000 79.300 95.500 96.300	.0883	0171 0210 0029			0335 0350		0009						0206	•	
-	103.000 105.000 112.500 117.500 120.800 127.900			•		0294	. 1831		.2085	.0976			0143		0173	0785

UPWT 1059 (1H4) 31-T15-S8N16 ORBITER FUSELAGE

(RQ3BAA)

PHI 135.000					01-14	1 1005 (1041 11-	112-201411	D OKBII	ER FUSEL	MOE		inga	onn,		
X/LB	MACH ()) = 2.	.360 A	ALPHA (1) =	.000										
PHI 135.000	SECTION	(1)ORB11	TER FUSEL	.AGE		DEPENDE	AT VARIA	BLE CP/C	PS .							
150 100	X/LB	.2000	.3000	.4000	.5000	6000	.7810	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
155.000	130.000 135.000 139.600		0601			0158					.0314			•		
Note					ē	0098						•				
MACH (1) = 2.360	•					,_		-		٠.						
SECTION (1)ORBITER FUSELAGE DEPENDENT VAHIABLE CP/CPS X/LB		0913	0712													
X/LB	MACH 1 I) = 2.	.360 A	LPHA (2) = 5	i.000 P	INF =	.48020	Q(PS	I) = 1.	B721	RN/L	= 1.200	CP	STG =	1.7063
PHI	SECTION	(1)ORB[1	TER FUSEL	.AGE		DEPENDE	AIRAV TE	BLE CP/C	P5							
.000	X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1550	.1700	.1750	.1800
174.000 180.000 .8924 .1670 .1256 .1358 .1567 .4369 .4937 .4937 .4381 X/L8 .2000 .3000 .4000 .5000 .6000 .78(0 .8000 .8650 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145 PHI .000 .0284 .00450281 .0011 .0402 .27780100 24.000 .0170 31.500 .0097 33.1000147 35.00000330220 45.00000330220 50.000 .0414 51.600 57.0000351	.000 10.000 20.000 24.500 39.000	. 8924	.5586	. 2925	.2781		.11 5	.1167	.1583 .0658 .0778		.esoo.					•
PHI	174.000	.8924	•		•	.1670			.1256	.1358	. 1567	.4369	.5311	.4937	.3202	.438t
.000 .0284 .00450281 .0011 .0402 .2778089310791051 23.0000100 24.000 .0170 31.500 .0097 33.1000147 35.000 .0040 40.00000330220 45.0000246 50.000 .0414 51.600 57.0000351	X/LB	.2000	.3000	.4000	.5000	6000	.78(0	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
33.1000147 35.000 .0040 40.00000330220 45.0000246 50.000 .0414 51.600 57.0000351	.000 23.000 24.000	.0170		0281	.0011	.0402		.2778	· .			0893		1079	1051	
45.0000246 50.000 .0414 51.6000351	33.100 35.000	.0040				•						·.				:
57.0000351	45.000 50.000													- 0151		
65.0000445 65.0000445	57.000 60.900 65.000		0417													

DATE 20 APR 76

PAGE TABULATED SOURCE DATA - 1H4 UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE (RQ3BAA) 2.360 ALPHA (2) = 5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .2000 .9630 1.0000 1.0145 .3000 .4006 .5000 .6000 .7800 .8000 .8050 .0230 .8620 .9500 PHI 69.000 -.0475 79.300 -.0489 95.500 -.0464 -.0226 95.700 -.0360 96.300 .0782 103.000 -.0464 -.0872 105.000 112.600 -.0466 -.0321 -.0360 120.800 .0809 127.900 .1047 129.500 .1291 130,000 .1081 .0202 -.0086 135.000 -.0836 -.0472 139,600 .1125 144.000 .0238 .1204 155.000 180.000 .0202 -.0550 -.0344 X/L8 1.0250 1.0500 PHI .000 -.0823 -.0673 CPSTG 1.7529 MACH (2) =2.950 ALPHA(1) =1.2100 = .000 PINF .26525 Q(PSI) = 1.6156RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VAR ABLE CP/CPS X/LB .1750 .1800 .0000 .1600 .1650 .1700 .0050 .0200 .0400 .0500 .0601 .0800 .1000 .1250 .1500 PHI .7369 .000 .5425 .9606 .2175 . 1566 . 195. .2212 -.0100 10.000 20.000 .1301 24.500 .1369 39.000 .1039 163.000 .3609 174.000 .6033 180.000 5955 .5593 .9806 .5133 .2190 .1706 .1712 .2010 1.0145 X/LB 1.0000 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 PH1 .000 .0515 .0344 .0196 .0003 -.0093 .1979 -.0573 -.0699 -.0684 23.000 .0168

UPWT 1859 (1H4) 0:-T15-S8N16 ORBITER FUSELAGE

(RQ3BAA)

											-				
MACH (2) = 2.	1A 022	PHA (1) =	.000		-				-				
SECTION	(1)CRBIT	ER FUSEL	AGE		DEPENDEN	IT VAR:A	BLE CP/Cf	°5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 24.000 31.500 35.100 35.000 45.000 57.000 66.000 69.000 69.500 95.500 95.500 95.700 96.300 112.600 117.500 120.800 135.000	.0151 .0105 .0026 .0157 .0584	.0191 .0196 .0225 .0072 .0038 .0034 .0041	.4000	.5000	0285 0254 0239 0229	.2546	0263	.8050	.0721 .1278 .1301	.0230	. 9500	~.0085 0048	0167	0128	0644
155.000 180.000	.1474	0224			0086									•	• • • •
X/LB	1.0250	1.0500													
PHI .000	0637	0524					•			-	,	-			٠.

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 5 (RQ3BAA) UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE CP5TG 1.2100 Q(PSI) = 1.6156RN/L MACH (2) = 2.950 ALPHA (2) =5.000 PINF .26525 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1650 .1700 .1750 .1000 . 1250 .1500 .1600 X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 PHI .001a .5134 .000 .9038 .5572 .2434 .2021 .1362 .1153 .0668 10.000 20.000 .0531 24.500 39.000 .0620 .0823 163.000 174.000 .2766 .4424 .4277 .1089 .1142 .1353 .3537 .4539 180,000 .9038 .1511 1.0000 1.0145 .8290 .8620 .9500 .9630 .9750 X/LB .8000 .8050 .2000 .3000 .4000 .5000 .6000 .7800 PHI -.0667 -.0639 .000 .0262 .0238 -.0013 -.0139 .0003 .1867 -.0543 23.000 24.000 31.500 .0125 .0119 .0083 33.100 .0054 35.000 .0024 40.000 .0131 -.0030 45.000 50.000 -.0048 .0519 51.600 -.036157.000 -.0124 60.900 -.014B 65.000 -.0158 -.0383 68.000 69.000 -.015B 79.300 -.0414 95.500 -.0417 -.0323 95.700 -.0045 96.300 .0528 103.000 -.0419 . -.0632 105.000 112.600 -.0419 -.0172 -.0186 117.500 120.800 .0548 127.900 .0730 129,500 .0931 130.000 .0858 .0136 ~.0083 135.000 -.0361 -.0524 .0875 139.600 144.000 .0048 155.000 .1082 180.000 .0530 -.0365 -.0235

-.0366

117.500

120.800

.0109

(RQ3BAA) UPWT 1059 (IH4) 01-115-SBN16 ORBITER FUSELAGE MAC ALPHA (2) = 2) = 2.950 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 -.0616 -.0501 1.7639 -5.000 = 1.2000 MACH (3) =3.700 ALPHA (I) = PINF = .131**7**5 Q(PSI) = 1.2629SECTION (!)ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1750 X/LB .0200 .0400 .0800 .1000 .1250 .1500 .1600 . 1650 .1700 .0000 .0050 .0500 .0600 PHI .000 .0212 1.0311 .4694 .2376 1655 .1918 . 1699 .8815 .1297 10.000 20.000 24.500 .1153 39.000 .0370 .2030 163.000 174.000 .4781 .7808 . 1590 .8148 180.000 1.0311 .2334 .2695 .6791 .2927 1.0145 1.0000 .9630 .9750 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 PHI -.0387 -.0352 -.0257 .000 .0550 .0248 .0386 .0482 .0318 .1852 23.000 .2496 24.000 31.500 33.100 .0298 .0327 .0392 35.000 .0413 40.000 .0650 .0370 45.000 .0331 50.000 .0723 -.0042 51.600 57.000 .0328 60.900 .0229 65.000 .0192 68.000 .0887 69.000 79.300 95.500 .0060 .0032 .0094 .0140 95.700 96.300 -.0095 .0406 103.000 .0121 .0191 105.000

PAGE

(RQ3BAA) UPWT 1059 (IH4) 01-115-SBN16 ORBITER FUSELAGE MACH (3) =3.700 ALPHA (1) = -5.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .9630 .9750 1.0000 1.0145 .2000 .3000 .4000 .5000 .6000 .7800 .8050 .8290 .8620 .9500 .8000 PHI 127.900 .1219 129.500 130.000 .1426 .0555 1159. .1841 135.000 .0044 .0103 139.600 .0439 .0982 144.000 155.000 .0349 180,000 .0181 .0068 .7987 X/LB 1.0250 1.0500 PHI -.0376 -.0371 .000 = 1.7839 MACH (3) =3.700 ALPHA (2) =.000 PINF = .13175 Q(PSI) = 1.2629RN/L = 1.2000 CPSTG SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1650 .1700 .1750 .1900 .1600 X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .6090 .1049 .000 .9794 .5735 .0092 .2314 .1394 .1496 .1704 10.000 20.000 .1028 24.500 .1006 39.000 .0812 .3419 163.000 174.000 .5578 .6057 .5884 180.000 .9794 .2053 .1560 .1580 .1792 .4580 X/LB .2000 .8290 ,9500 .9630 .9750 1.0000 1.0145 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8620 PHI .000 .0344 .0157 .0251 .0058 . 1435 -.0276 -.0376 -.9310 .0257 23.000 1550. 24.000 .0214 31.500 33.100 .0200 .0250 35.000 .0171 40.000 .0344 .0214 45.DDD .0185 50.000 .0574 51.600 57.000 -.0189 .0093 60.900 .0090

(RQ39AA)

				UPW	T 1059 (I	H4) 01-1	t 2-28V18	ORBITE	R FUSELA	\GE		(RQ39.	AA J		
MACH (3)	= 3.	700 AL	(S) AH q .	= ,	.000										
SECTION (1)ORBIT	ER FUSELA	/GE		DEPENDEN	IT VARIA	BLE CP/CP	S							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9530	.9750 1	.0000	1.0145
PHI 65.000 68.000 69.000		.0087									·		0220	-	
79.300 95.500 95.700 96.300	.0510	0024			0143		0150	٠							
103.000 105.000 112.600 117.500					0119				2221			0076	-	.0076	0398
120.800 127.900 129.500 130.000						.2274		.1822	.0721	.0311		0054			
135.000 139.600 144.000 155.000	. 1396	0263			0122				.0853			.0179			
180.000	.1061	0056			0116										
X/LB	1.0250	1.0500													
PHI .000	0350	0313													
MACH (4)	= 4 .	600 AL	PHA []]	= -5	.000 PI	INF =	.66200-0	ı QCPSI	1) = .98	9085	RN/L	= 1.2000	CPS1	rg =	1.8033
SECTION (110RBIT	ER FUSEL	AGE		DEPENDEN	NT VARIA	BLE CP/CF	PS							·
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	1.1099	.5123	.2616	.1669		. 1876	.2003	.7819 .1893 .1250 .1204 .1094		.0360		.8413		.5098	
180.000	1.1099				.3066			.2410	.2425	.2784	.6950	.07.3	.9421		.0893

DATE 20 APR 76

PHI

.000

-.0265 -.0268

. TABULATED SOURCE DATA - IH4

PAGE (ROSBAA) UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE MACH (4) = 4.600 ALPHA (1) = -5.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .9750 1.0000 1.0145 X/LB .8290 .8620 .9500 .2000 .3000 .4000 .5000 .6000 .780C .8000 PHI -.0272 -.0234 000. .0231 .0250 .0525 .0237 .0427 .0246 .1755 -.0149 24.000 31.500 33.100 .0268 .0314 .0268 35.000 40.000 .0268 .0397 .0204 45.000 50.000 51.600 57.000 .0176 .0635 -.0025 .0301 60.900 .0304 65.000 .0301 68.000 69.000 79.300 95.500 95.700 96.300 -.0048 .0182 .0067 .0078 .0017 .0159 .0692 .0078 105.000 112.600 117.500 120.800 -.0244 .0059 .0147 .0147 .0971 127.900 .0718 129.500 .0666 130.000 .1039 .0545 .0182 135.000 139.600 -.0029 .0013 .0860 .0370 144.000 .2239 .1785 155.000 180.000 .0162 .0059 X/LB 1.0250 1.0500

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	,0		INDULATE		E DATA	11111			٠.						•-
				UPL	IT 1059 I	(1H4) O1-	T15-S8N16	ORBITE	R FUSEL	AGE		tRQ3	BAA1		
MACH (4)	= 4.0	600 AL	PHA (2)) =	.000 F	INF =	.66200-0	i Q(PSI) = .9i	89 8 5	RN/L	= 1.200	O CF	STG =	1.8033
SECTION (1)ORBITE	ER FUSEL/	\GE		DEPENDE	NT VARIA	BLE CP/CP	S							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	.9083	.6246	.2681	. 1722		. 1287	. 1961	.4140 .0756 .0821 .0729 .0784		.0177		.519B		. 3236	
180.000	.9083				.2054			. 1520	. 1557	. 1765	,4067		.6414		.6525
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000	.0269	.0131 .0131	.0149	.0268	.0116		.1164				0183		0279	0234	
31.500 33.100 35.000	.0196	.0150				•			·						
40.000 45.000 50.000	.0214	.0131 .0113							-						
51.603 57.000 60.900 65.000		.0157 .0165 .0165											0119		
68.000 69.000 79.300		.0165			001.7								0151		
95.500 95.700 96.300	.0832	.0165			0043 0055		0099		٠						
103.000 105.000					0059					-					0267
112.600 117.500 120.600 127.900 129.500					0059	.1075		.1369	.0589			0031		0031	
130.000 135.000 139.600		.0161			0079				.1070	.0311		0167			
144.000 155.000 180.000	.1350 .1281	.0054			0127							.0085			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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ALPHA (2) =

UPWT 1059 (1H4) 01-"15-SON16 ORBITER FUSELAGE

(RQ3BAA)

MACH (4) = 4.600

SECTION (!)ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB

1.0250 1.0500

PHI

.000 -.0272 -.0272

ORIGINAL PAGE

PAGE 11

UPWT (059 (IH4) 01-T15-S8N16 OR6. UPPER WING

(15 APR 76)

REFERENCE DATA		PARAMETRIC DATA
SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = BREF = 1290.3000 INCHES ZMRP = SCALE = .0110	.0000 INCHES .0000 INCHES .0000 INCHES	RN/L = 1.200 BETA = .000
MACH (1) = 2.360 ALPHA (1) =	.000 PINF = .48020 Q(PSI) = 1.8721	RN/L = 1.2000 CPSTG = 1.7063
SECTION (110RB. UPPER WING	DEPENDENT VARIABLE CP/CP5	•
2Y/BW .4000 .6000 .8000		
X/CH .050 .0793 .20004320392 .0285 .60008460809 .8000817 .900 .13510832 .9500725		
MACH (1) = 2.360 ALPHA (2) =	5.000 PINF = 48020 Q(PSI) = 1.8721	RN/L = 1.2000 CPSTG = 1.7063
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS	
0008. 0006. 0004. WB\YS		•
X/CW .050 .0577 .200070305770064 .60010361014 .8001015 .900 .13350975 .9500861		
MACH (2) = 2.950 ALPHA (1) =	.000 PINF = 25525 Q(PSI) = 1.6155	RN/L = 1.2100 CPSTG = 1.7529
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS	
0003. 0006. 0004. WB\YS		
X/CW .050 .0791 .20002310072 .0527 .60005800557 .8000557 .900 .06030375 .9500402		

```
UPWT 1059 (1H4) 01-T15-S8N16 ORB. UPPER WING:
                                                                                                       (RQSUAA)
                2.950
                         ALPHA ( 2) =
                                         5.000 PINF
                                                                                                                 CPSTG = 1.7529
                                                           .26525
                                                                      Q(PSI) = 1.6156
                                                                                            RN/L
                                                                                                  = 1.2100
 SECTION ( 1) ORB. UPPER WING
                                           DEPENDENT VARIABLE CP/CPS
SA'. SM
            .4000
                    .6000
                            .8000
  X/CM
    .050
            .0596
    .200
           -.0392
                   -.0238
                            .0179
    .600
           -.0675
                   -.0641
    .800
                   -.0641
    .900
.950
                    .0650
                          -.0451
                   ~.0503
MACH ( 3) =
               3.700
                         ALPHA(1) =
                                                                                                                 CPSTG = 1.7839
                                        -5.000
                                                 FINE
                                                        = .13175
                                                                      Q(PSI) = 1.2629
                                                                                            RN/L
                                                                                                  = 1.2000
 SECTION ( 1) ORB. UPPER WING
                                           DEPENDENT VARIABLE CP/CPS
SAVBM
            .4000
                    .6000
                            .8000
  X/CW
    . 050
            .0062
    .200
           -.0269
                   ~.0202
                            .0087
    .600
            .0224
                   -.0202
    .800
                    .0370
    .900
                   -.0021
                            .5195
                    .0982
MACH (3) =
               3.700
                         ALPHA (2) =
                                                                                                                 CPSTG = 1.7839
                                                          .13175
                                                                      Q(PSI) = 1.2629
                                                                                           RN/L
                                                                                                   = 1.2000
 SECTION ( 1) ORB. UPPER WING
                                           DEPENDENT VARIABLE CP/CPS
SA\BM
            .4000
                    .6000
                            0008.
  X/CW
    .050
            .0616
    .200
           -.0109
                    .0071
                            .0568
    .600
           -.0371
                   -.0327
    .800
                   -.0325
    .900
                    .0339
                           -.0030
                   -.0101
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TABULATED SOURCE DATA - 1H4

DATE 20 APR 76

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PAGE 13

DATE OD 100 00	T4000 4750 G	CURSE BATA AND		•		PAGE 14
DATE 20 APR 76	FABULATED S	OURCE DATA - 1H4				PAGE 14
		UPWT 1059 (1H4) 0	1-T15-S8N16 ORB.	UPPER WING	(RQ3UAA	1
MACH 4) = 4.6	00 ALPHA (1) =	-5.000 PINF	= .66200-01 Q(PS	31) = .98085	RN/L = 1.2000	CPSTG = 1.8033
SECTION (1) ORB. U	PPER WING	DEPENDENT VAR	IABLE CP/CPS			
.4000 .4000	.6000 .8000	·				
X/CW .050 .0901 .000 .0119 .000 ~ .0182	.0331 .1013 0116	•	•			
	0070 .0371 .0334					
MACH (4) = 4.6	00 ALPHA (2) =	.000 PINF	= .66200-01 Q(PS	28089. = (18	RN/L = 1.2000	CPSTG = 1.8033
SECTION (1)ORB. U	PPER WING	DEPENDENT VAR	IABLE CP/CPS			
000P. WB\YS	.6000 .8000					
X/CN					•	
	.0057 .0606 0214					
.800 .900 .950	0157 .0321 .0171 .0054	·				

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PAGE 15

			_ UPW1	T 1059 (IH4) 01-	T15-S8N1	ORB. L	OWER WI	NG			(RQ3L/	(A) (15	APR	76)
	REFERENC	E DATA									PA	RAMETRI	DATA		
SREF = LREF = BREF = SCALE =	2690.0000 SQ. 1290.3000 INC 1290.3000 INC	HES YMRP	□ ,(0000 INC 0000 INC 0000 INC	HES				Ri	N/L =		1.209	BETA =		.000
MACH ()	1) = 2.360	ALPHA (() = .	.000 P	INF =	.43020	Q(PSI) = 1.	8721	RN/L	=	1.2000	CPSTG	*	1.7063
SECTION	(1)ORB. LOWE	R WING		-DEPENDE	NT ,VARIA	BLE CP/C	rs								
SA\BM	.2500 .3	3011 .3480	4000	.5000	6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .003 .004 .005		.0048		.1995	.2947 .0413 .0095 .3845 .0995	. 2963	.3284 .0351 .0238 .3654 .0815		~.0574						
.025 .045			. 060 l . 0606	.0377	.0155	.0377	,000							•	
100 .153 .177	0213		. 0000	.0158	.0048		.0330	.0392							
.200 .299 .302 .428 .444	.0106	-	0058 .0309		.1273	.0487									
.487 .559 .600 .700	.2603		.2297	.2060	.2316 .2063										
.800 .850 .900	.2003		0378		.0856 .0277 0176	. C49 4		.0015					,		
MÁCH, (1	1) = 2.360	ALPHA ()	2) = 5.	.000 P	INF =	.48:020	Q(PSI) = 1.	8721	RN/L	. =	1.2000	CPSTG	=_	1.7063
SECTION	(1) ORB. LOWE	R WING		DEPENDE	NT VARIA	BLE CP/CI	PS	•						-	
SA\BM	.2500 .3	3011 .34 8 0	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .000 .000 .002 .003 .004 .000	~.(9287 . 1939		. 2990	.3677 .1058 .0601 .4034 .1747	.?709	.3667 .1186 .1037 .3304 .1738 .1057		0947						

)

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAA)

MACH (1) =ALPHA (2) = 5.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 SYYBW .2500 .4000 .5000 .6000 .7500 .8500 .9500 .3011 . 3480 X/CM .0944 .1058 .025 .0814 .045 .0835 .100 .0539 .1135 .1209 .153 -.0215 .0703 .177 .200 .0345 . 299 .0116 .1037 .302 .1329 .428 .2384 .0312 .444 .497 .3015 .559 .2852 .3810 .600 .700 .2439 .736 .2784 .0997 .800 .850 .0375 .900 -.0666 -.0095 .0760 .1400 CPSTG = 1.7529= 1.2100 MACH (2) = 2.950 ALPHA (1) = PINF = .26525 Q(PSI) = 1.6156RN/L SECTION (110RB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CW .000 .3129 .3364 -.0236-.0088 . 1899 .3057 .001 -.0100 .0680 .0595 .0441 .002 .0310 .003 .3991 .3786 .130B .004 .0988 .0447 .005 .0452 .025 .0185 .0373 .0572 .045 .0225 .100 .0274 .0487 .0538 -.0054 . 153 .0190 .177 .200 .0137 -.0114 . 299 .0318 .302 .0356 .428 .0537 .444 -.0039 .487 .0954 .1744 .559 .600 .1114

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DAGE 15

PAGE DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3LAA) UPWT 1059 (1H4) 01-715-SEN16 ORB. LOWER WING 2.950 ALPHA (1) =SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 SAVBM .6000 .7500 .9500 .3011 .3480 .4000 .5000 X/CM .700 .1692 .736 .1979 .1326 .800 .850 .0719 .0036 .900 -.0156 .0231 .0837 MACH (2) = 2.950 ALPHA (2) = 5.000 PINE .26525 Q(PSI) = 1.6156SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .9500 .9980 .2500 .3011 .3480 .4000 .5000 .6000 .7500 X/CW -.0430 .3607 .000 .1175 .3794 .1302 100. -.0179 -.0030 .2696 .002 .0722 .1043 .3534 .1926 .003 .3938 .1830 .004 .0912 .1096 .005 .0668 .0906 .1276 .025 .045 .0692 .100 .0620 .1205 ,1222 .153 -.0119 .177 .0362 .0093 .299 -.0087 .0415 .0805 .428 .0874 .444 .0019 .1265 .487 .559 .1829 .600 ,2489 .700 .736 .2470 .1866 .800 .1404 . 850 .0849

.0390

.1240

.0302

.900

-.0409

-.0035

DATE 20 APF	76		TABULATE	D SOURC	E DATA -	144								Р	AGE	18
				UPW	IT 1059 (1	H4) 01-	T.5-S8N16	ORB. 1	ONER WIN	13			(RQ3LAA)			
MACH (3)	= 3.7	700 AL	PHA (1)	a -5	.000 PI	NF ≖	13175	Q(PS)	1.2	2629	RN/L	=	1.2000	CPSTG	13	1.7839
SECTION (t)ORB. L	OWER WIN	1G		DEPENDEN	T VARIA	BLE CP/CP	5								
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980				•		
X/CW .000 .001 .002 .003		.0090	. 1491		.2563	.0363 .0105 .3883 .0853	.3410	.0400 .0222 .4308 .0722 .0236		.0255						
.005 .025 .045				.0191	.0229	.2633	.0421	.0961					-			
.100	.0133			.0147		.0523		.0320	0092							
.177 .200				.0318	.0640											
.299 .302 .428	.0079			.1296		01:75	.0089									
444 487	. 1782				.0050	.0475										
.559 .600 .700 .736	.0176			0178	.0000	.0662 .0771										
. 800 . 850 . 900				.0191		.0496 .0211 .0320	.0241		~.0003							
MACH (3)	⇒ 3. 1	700 AL	(S) AH9.	=	.000 PI	NF ≔	.13175	QtPS	1) = 1.8	2629	RN/L	14	1.2000	CPSTG	122	1.7839
SECTION (DORB. L	OWER WIN	IG		DEPENDEN	IT VARIA	BLE CP/CF	5								
2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .002 .003		.0063	0023		. 1553	.2540 .0452 .0164 .3498 .0950	. 2867	.3475 .0708 .0476 .3879		0103					•	
.005 .025 .045 .100				.0185 .0207	.0257	.0279	.0567	.0529	neac						٠.	
. 153 . 177	.0041				.0085	.0098		. 0495	. 0589							•
≎nn				_ 007E												

PAGE 19 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) 01-T15-SBN16 ORB, LOWER WING (RQ3LAA) MACH (3) =3.700 ALPHA (2) = .000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .2500 .4000 .5000 .6000 7500 .8500 .9500 .9980 .3011 .3480 X/CW .302 .0125 0357 .428 .0463 .444 S100. .0516 .559 .1013 .0655 .0659 .600 .700 .736 .1258 .800 .1039 .850 .0788 -.0079 -.0176 .0308 = 1.8033 **CPSTG** MACH (4) = 4.600 ALPHA (1) = -5.000 PINE 10-00588. Q(PSI) = ...98085RN/L = 1.2000 = SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS AB/AR .9500 .9900 .2500 .3011 .3480 .4000 .5000 .6000 7500 .8500 X/CW .3702 .0556 .2833 .0553 .000 .0112 .001 .0195 .0176 .1773 2843 .0241 .002 .0349 .4590 .0956 .003 .004 .1146 .005 .0360 .0375 .025 1850. .0369 .0562 .045 .0222 .0387 .0433 .100 .0133 .0250 . 153 .177 .0263 .200 .200 .0160 .0143 .302 .0237 0401 .428 .0470 .0125 .487 .559 .600 .0392 .0927 .0349 .0210 .700 .736 .800 .1495 .0319 .0354 .850 .0001 .900 -.0070 .0070

				UPW1	1059	(1H4) O1-	T15-58N1	3 ORB. I	LOWER W	ING			(RQ3LAA)			
MACH (4)	= 4.	600 AL	.PHA (2:) = .	.000	PINF =	.65200-	01 Q(PS	9. = (1	9808 5	RN/L	x	1.2000	CPSTG	=	1.8033
SECTION (11CRB.	LOWER WIN	NG		DEPENDE	ENT VARIA	BLE CP/C	? S					•.			
2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	. 7500	.8500	.9500	.9980						
.003 .003 X/CM	·	.0104	.0058		. 1657	.2711 .0591 .0260 .3462	.3126	.3789 .0859 .0521 .3967		.0039						
.004 .005 .025 .045				.0205 .0205	.0389		. 1683	.1354			•	٠				
.100 .153 .177 .200	.0131			0003	.0040	.0134		.0619	.0655							
.299 .302 .428	.0031			.0082		.0344	. 1293									
.444 .487 .559	.0031			.0606	.0361											
,500 .700 .736	.0960					.0369 .0196										
.800 .850 .900	, , , , , ,			0111		.0337 .0391 .0340	. 1155		0043		,					

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PAGE
DATE 20 APR 76
                       TABULATED SOURCE DATA - 1H4
                                                                                                               ( 15 APR 76 )
                                      UPWT (059 (TH4) 01-T15-SBN16 ORB. VERT. TAIL
                                                                                                    (RQ3VAA)
                                                                                                PARAMETRIC DATA
             REFERENCE DATA
                                                                                                                         .000
                                                                                                           BETA
                                                                                      RN/L
                                                                                                   005.1
SREF = 2690.0000 SQ.FT.
                                        .0000 INCHES
LREF = 1290.3000 INCHES
                           YMRP
                                        .0000 INCHES
BREF = 1290.3000 INCHES
                           ZMRP
                                        .0000 INCHES
SCALE =
             .0100
                                                                                              = 1.2000
                                                                                                              CPSTG = 1.7063
MACH ( 1) = 2.360
                                                     = .46020
                                                                    Q(PSI) = 1.8721
                                                                                         RN/L
                        ALPHA ( 1) =
                                         .000 PINF
                                          DEPENDENT VARIABLE CP/CPS
SECTION ( 1)ORB. VERT. TAIL
Z/RV
                    .5320
                                   .9050
 X/CV
                   .3825
.1107
                           .2963
    .000
            .3959
                                   .3809
           .1327
    .300
                           .0891
    .500
                    .0930
    .700
                  -.0408
          -.0579 -.0567
                         -.0383
                                                                                                              CPSTG = 1.7053
                                        5.000 PINF = .48020
                                                                    Q(PSI) = 1.8721
                                                                                         RN/L = 1.2000
MACH ( 1) =
               2.360
                        ALPHA ( 2) =
SECTION ( 1) ORB. VERT. TAIL
                                          DEPENDENT VARIABLE CP/CPS
Z/BV
            .2990
                    .5320
                           .7650
                                   .9050
 X/CV
    .000
            .3288
                    .2957
                           .2302
                                   .2925
    .300
            .0984
                    .0816
                           .0681
    .500
                    .0625
    .700
                  -.0555
           -.0724 -.0671 -.0515
                                                                    Q(PSI) = 1.6156
                                                                                         RN/L
MACH ( 2) = 2.950
                        ALPHA ( 1) =
                                         .000 PINF
                                                     = .26525
 SECTION ( 1) ORB. VERT. TAIL
                                          DEPENDENT VARIABLE CP/CPS
Z/BV
            .2990
                    .5320
                           .7650
                                   .9050
 X/CV
                           .3237
    .000
                    .3804
                                   .4081
            .4105
           .1108
    .300
                    .0740
                           .0550
    .500
                    .0781
```

-.0092

~.0164

-.0342 -.0222

DATE 20 APR 76	5 TABULATE	D SOURCE DATA - 1H4		. PAGE EE
		UPWT 1059 (1H4) 01-T15-38N16	ORB. VERT. TAIL	(RQ3VAA)
MACH (C) =	2.950 ALPHA (2)	= 5.000 PINF = .26525	Q(P51) = 1.6156 RN/L	= -1.2100 CPSTG = 1.7529
SECTION (1)	DRB. VERT. TAIL	DEPENDENT VARIABLE :P/CPS		
Z/BV .8	.990 .5320 . 7650	.9050		
.300 .0 .500 .700	3257 .3040 .2520 3713 .0417 .0239 .0449 0237	.3070		
MACH: (3) =	3.700 ALPHA (1)	= -5.000 PINF = .13 75	Q(PS1) = 1.2629 RN/L	= 1.2000 CPSTG = 1.7839
SECTION (1)	ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS		
Z/BV .a	2990 .5320 .7650	.9050		
.300 .0 .500 .700	0990 .0718 .0562 0018 .07360001 .0205 .0144 3982 .2728 .4990	.2649		
MACH (3) =	3.700 ALPHA (2)	= .000 PINF = .13'75	Q(PSI) = 1.2629 RN/L	= 1.2000 CPSTG = 1.7839
SECTION (1)	DRB. VERT. TAIL	DEPENDENT VARIABLE (P/CPS		
2/BV .a	990 .5320 .7650	.9050	•	
.300 .0 .500 .700	,243 .3444 .2958 0775 .0532 .0403 .0535 .0004 009900620096	. 3607		
MACH (4) =	4.600 ALPHA (1)	= -5.000 PINF = .66200-01	Q(PSI) = .98085 RN/L	= 1.8000 CPSTG = 1.8033
SECTION (1)	ORB. VERT. TAIL	DEPENDENT VARIABLE (P/CPS		
Z/8V .a	2990 .5320 .7650	.9050		•
.300 .0 .500 .700	+028 .3643 .3761 0579 .0449 .0415 .0436 .0019 000900120060	.5182		

DATE 20 APR 76 TABULATED SOURCE, DATA - 1H4 UPWT 1059 (1H4) 01-T15-S8N16 ORB. VERT. TAIL (RQ3VAA) CPSTG = 1.8033 .000 PINF = .66200-01 Q(PSI) = .98085 1.2000 MACH (4) = 4.600 ALPHA (2) = SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .000 .300 .500 .700 .4006 .0384 .3542 .0302 .0275 .2385 .0217 .3443 -.0080 -.0101 -.0115 -.0125

PAGE

.2326

UPWT 1059 (1H4) 01-115-S8N16 EXTERNAL TANK

(ROSTAA) (15 APR 76) REFERENCE DATA PARAMETRIC DATA SREF = 2690.0000 SQ.FT. .000 .0000 INCHES RN/L 1.200 BETA 1290.3000 INCHES YMRP .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 MACH (1) =2.360 ALPHA (1) = .000 PINE .48020 Q(PS1) = 1.8721RN/L 1.2000 CPSTG = 1.7063SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .0400 .0800 . 1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000 THETA .000 .0355 .4028 .2440 .0594 45.000 .0174 67.500 -.0083 -.0534 -.0850 90.000 -.0059 .5379 -.0495 -.091B -.0205 -.0068 . 2764 112.500 -.0255 -.0764 -.0001 -.0020 .2351 135.000 .0229 .0460 .0033 -.0212 157.500 .1007 167.000 .1037 180,000 .9397 .0002 .0446 .7792 .6770 .4013 .2498 .0654 -.0151 .0014 .0763 .1159 197.000 . 2532 .0694 -.0035 210.000 .0873 .0679 220.000 .0934 225.000 .0398 232.000 .0038 X/LT .4250 .4500 .4750 .9000 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 THETA .000 -.0171 -.0028 45.000 -.0026 .0527 -.0012 67.500 -.0529 .0079 -.0022 -.0062 -.0056 -.0063 .1094 90.000 -.0850 ~.0131 .0076 -.0158 -.0198 -.0220 .0994 -.0145 .0157 112.500 -.0711 -.0260 .0445 .0423 .0288 .0221 .0097 .0002 .0870 .1866 123.000 .0807 .1380 .1853 135.000 .0594 .0201 . -.0159 .0071 .0197 .0071 .0017 .0057 .1449 .1763 157.500 .1177 .0044 .1190 .0233 .0044 .0306 -.0113 -.0072 .0017 .0308 .1176 .2276 161.000 .1062 166.500 1550. -.0145 . 1354 180.000 .2957 .0410 .2549 -.0108 .0203 .0399 .0233 .0156 -.0084 ~.0153 -.0068 .0330 .1632 197,000 1550. .2682 -.0204 210.000 .0114 .0055 220.000 .0574 .0171 232,000 .0084 .0140 X/LT .9250 .9350 .9370 .9750 THETA

DATE 2D APR 76

232.000

TABULATED SOURCE DATA - 1H4

25 PAGE (RQ3TAA) UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK 2.360 ALPHA (1) = .000 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 151.000 .2577 180.000 .2929 ~.0805 210.000 .3893 CPSTG = 1.7053 $MACH \cdot (1) =$ 2.360 ALPHA (2) = a 1.2000 5.000 PINE 48020 Q(PSI) = 1.8721 RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .1500 .2750 .3250 .3350 .3500 .3750 .4000 .0100 .0400 .0800 .2500 .3000 .2000 THETA .0582 .000 .4927 .3185 .1061 45.000 .0905 -.0357 67.500 .0066 .0131 90.000 -.0080 -.0122 .2872 .6102 -.0484 -.0902 . 1625 112.500 -.0089 -.0179 -.0827 -.1104 135.000 -.0089 -.0028 -.0024-.0310 157.500 .0-56 .0514 167.000 .0293 .1001 180.000 .9921 .6935 .6546 .3127 .1819 .0268 ...0140 -.0076 -.0215 -.0009 197.000 -.0191 .1877 .0315 210.000 .0319 .3952 -.0275 220.000 .0033 225.000 232.000 -.0372 .9000 X/LT .4250 .7500 .8000 .8500 .8750 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 THETA .0063 .000 .0065 45.000 .0052 .0424 .0019 .1079 .1570 67.500 -.0202 .0283 .0217 .0138 .0081 .0250 .0172 .0063 90.000 -.0888 -.0639 .0169 .0382 1800. .1153 .0043 112.500 -.0977 .0132 .2076 -.0554 .0103 .0201 .1345 .0272 123.000 .1013 .1780 .2160 .0313 .2:24 135.000 -.0085 -.0122 -.0179.0119 .0063 -.0006 .0121 .1717 157.500 -.0205 .2324 .0807 .0638 -.0070 -.0015 - 0076 -.0235 -.0060 .0145 .0776 .1407 161.000 .0608 166.000 .0245 -.0064 180.000 .2171 .0922 .0299 .0280 .0714 .1783 .2576 .0118 .0239 .0136 -.0034 -.0170 -.0345 -.0116 197,000 .2726 .0142 -.0200 210.000 -.0056 .0672 .0329 .0065 220.000 . 0585

UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAA)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .2241
151.000 .2566
180.000 .2754 -.0876
210.000 .3960

MACH (2)	= 2.	950 AL	PHA (1	} =	.000 P	INF =	. 26525	Q(PS	D = 1.	6156	RN/L	= 1.210	o ce	STG =	1.7529
SECTION (1)EXTER	NAL TANK			DEPENDE	NT VARIA	ELE CP/C	PS		.**					
X/LT	.0000	.0050	0100	.0400	.0800	.1500	.2000	.2500	2750	.3000	.3250	.3350	.3500	.3750	.4000
TMETA .000 45.000 67.500 90.000				3739	. 2246	.0527				.0062			0128		.0186 .0098 0445
112.500 135.000 157.500 167.000							0147	0033	.0004 .0031	.1796 .0057	.5376 .0226 .0041	·	.0004 0054 0128	0038	0429 0424 .0173 .0554 .0595
180.000 197.000	.9811	.7160	7112	. 3596	.2240 885.	.0589 .0646	0046	.0069		.0014 .0007			.0137	.0342	.0588
210.000 220.000 225.000						.0630	r y					.0240			.0472 .0158
232.000		:										***************************************			.0602
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000		0456 0413		0419 0307 0403		0086 0006		0000 0000 0000 8500 2000	0023 .0249	0069 0095 .0275	0069 0122 0322	0126 0107 0073 0140 .0161	0044 .0376 .0435	.0953	.0071 .0664 .0795 .1244 .1280
135.000 157.500 161.000	.0691 .0857	.0115	0260	.0453 .0486		.0123 .0094		.0017	.0028 0035	.0093 0131	.0114 0212	.0054 .0037	.1027 .0732		. 123 i . 1528
166.000 180.000 197.000 210.000 220.000 232.000	.2271	. 1539	.0602	.0363 .0219 .0486	.0082	.0294	. 0329	.0231	.0109	0055 0082 0100	9253	0037 0120 0032	.0948	-	.1704 .1780
							4.00								

DATE 20 APR 76

197.000

210,000

232.000

TABULATED SOURCE DATA - 1H4

.0242

.0270

PAGE 27 UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK (RQ3TAA) MACH (2) = ALPHA [[] = 2.950 .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9350 .9370 .9750 THETA .1759 123.000 151.000 1893 180.000 .2327 -.0506 210.000 .2867 MACH (2) =1.2100 2.950 ALPHA (2) =CPSTG = 1.75295.000 PINE .26525 Q(PSI) = 1.6156RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .4000 .0100 .0400 .0800 . 1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 THETA .000 .4563 .2954 .0976 .0453 45.000 .0030 67.500 .0319 -.0107 .0191 90.000 -.0139 -.0048 -.0027 .0026 . 1909 .5373 -.04!0 112.500 -.0070 .0914 -.0357 -.0570 -.0075 135.000 -.0064 -.0016 .0132 -.0022 157.500 .0181 167.000 .0304 180.000 .9767 .0098 .2766 . 1663 .0316 -.0108 -.0018 -.0093 -.0066 .0448 197.000 .1699 .0374 -.0073 210.000 .0363 .0277 220.000 -.0258 225.000 .0050 232.000 .0153 X/LT .4250 .4500 .4750 .7000 .9000 .5000 .5250 .5500 . 5750 .6000 .6500 .7500 .8000 .8500 .8750 THETA .000 -.0005 .0078 45.000 .0030 .0053 .0014 67.500 -.0149 .0529 .0109 .0183 .0189 .0152 .0097 90.000 -.0516 -.0458 -.0282-.0020 .0242 .0175 .0341 .1454 .0101 112,500 -.0559 -.0453 -.0234 .0109 .0162 0175 .0136 .0099 .0605 .1460 123.000 .0374 .1085 . 1462 135.000 -.0245 -.0160 .0017 .0011 .0085 .1151 .1374 ~.0181 -.0006 .0033 157.500 .0338 .0414 .0071 .0188 .0003 -.0075 -.0220 -.0217-.0186 .0303 .0823 .1449 161.000 .0284 166.000 .0201 -.0206 180.000 . 1894 .1065 .0229 .0030 .0208 .0263 .0194 .0006 -.0125 -.0224 -.0269 .0282 .1029 . 1644

-,0247

.0070

~.0023

-.0129

-.0007

.0099

UPWT 1059 (IH4) 01-T15 S8N16 EXTERNAL TANK

(RQ3TAA)

MACH (2) = ALPHA (2) = 2,950

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1587 151,000 . 1544

180.000 . 1630 -.0654 210,000 .3082

1.7839 -5.000 PINE = .13175 Q(PSI) = 1.2629RN/L 1.2000 CPSTG **±** MACH (3) =3.700 ALPHA (1) = SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 .3750 X/LT .0050 .0400 .1500 .1000 .2500 .2750 .3000 .3250 . 3350 .3500 .0000 .0100 .0800 THETA -.0099 .000 .1430 .024B .0073 -.0254 45.000 -.0345 67,500 -.0132 -.0325 .1139 3940 -.0166 -.0232 .0007 .0214 90.000 -.(039 -.0046 .0101 112.500 .0167 .0101 .0500 .0720 .0280 .0114 .0194 135,000 .0789 157,500 .9765 167.000 .0592 .2597 .2786 .0274 .0243 .0345 180.000 .7711 .7378 .4273 .0946 .(166 .0277 .0473 197.000 .1013 .0260 .0331 .0729 210.000 2.7681 220.000 .1343 225.000 .0162 232.000 .9000 .8500 .8750 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .B000 THETA -.0032 -.0172 .000 .0780 45.000 .0038 -.0197 .0008 -.0131 -.0226 -.0192 -.0262 -.0192 .0244 67.500 -.0262 .0101 90.000 -.0010 .0151 .0054 -.0054 -.0051 .0415 -.0245 .0118 .0221 .0803 112.500 -.0026 .0141 .0318 .0415 .0446 .0351 .0305 .1067 .1411 123.000 .0339 .1657 135.000 .0318 .0236 .0695 .0911 .0860 .0407 .0200 .0177 .0262 .1186 .0729 157.500 .0405 .0473 .0379 .0658 .0209 .0165 .0074 .0095 .0431 .0831 161.000 .0345 .0284 .0584 166.000 .1588 .0124 .1505 .0339 .0240 .0027 .0638 180.000 .2008. .0447 .0439 .0174 .0285 .0328 .0237 .0972 197.000 .0237 .1593 210.00 .0126 .3016 .0351 ,1198 1.1918

29 DATE 20 APR 78 PAGE TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) 01-T15-38N16 EXTERNAL TANK (RQ3TAA) MACH 3,700 ALPHA (1) = ~5.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123,000 .0214 151.000 .1437 180.000 -.0339 .2749 210.000 . 0524 . 1 .7839 CPSTG MACH (-3) =-3.700 ALPHA (2) = PINF .13175 Q(PSI) = 1.2629 RN/L 1.2000 * .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 X/LT .3350 .3500 .3750 .0050 .0100 .0400 .0800 .1500 .2300 .2500 .2750 .3000 .3250 THETA .0154 .000 .3441 .2053 .0482 45.000 -.0064 -.0218 67.500 .0651 .0096 90.000 -.0817 .0911 .5856 .0344 -.0144 -.0062 .0023 .0098 -.0204 112.500 .0036 .0063 .0010 .0036 .0150 135.000 .0036 -.0057 157.500 .1422 .0252 167,000 .0141 .0098 .0312 180,000 .7219 .3380 .2094 .0565 .0107 .9786 .6803 .01144 .0141 197,000 .0637 .2085 .0115 .0320 210.000 .0611 .0312 220.000 225.000 .1012 .1089 232.000 .9000 X/LT .5000 .7500 .8000 .8500 .8750 .4250 .4500 .4750 .5250 .5500 .5"50 .6000 .6500 .7000 THETA .000 -.0059 -.0059 45.000 -.0122 .006B -.0161 67.500 -.0251 .0003 -.0092 .0378 -.0131 -.0089 -.0100. 90.000 -.0010 .0457 -,0244 .0016. -.0066 -.0191 -.0218 -.0020 -.0118 112.500 -.0191 .0219 .0180 .0866 -.0218 -.0211 .0090 .0178 .0013 -.0020 .0475 123.000 .0118 .0912 .0819 135.000 .0190 .0143 .0203 .0011 .0026 .0052 .0072 .0057 .0555 157.500 .0500 .0457 .0363 .0252 .0226 -.0030 -.0044 -.0128 -.0097.0185 .0799 .0052 161.000 .0414 165.000 :020 .0027 180,000 .1977 .1285 .0337 .0175 .0098 .0167 .0:58 .0041 .0092 .0010 -.0103 -.0165 .0351 .1127 .1231 197.000 .0320 .0010 210.000 -.0103 .0078

-.0193

.0655

.0018

2.5392

220.000

232.000

.7720

UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK (RQ3TAA) MACH (3) =3.700 ALPHA(2) =.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA .1135 123,000 151.000 .1121 .1524 -.0438 180,000 210.000 .1995 1.8033 MACH (4) =4.600 ALPHA (1) = Q(PSI) = .98085 RN/L = 1.2000 CPSTG = -5.000 PINF .66200-01 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3350 .4000 X/LT .0000 .3250 .3500 .3750 .2000 .2500 .2750 .3000 .0050 .0100 .0400 .0800 .1500 THETA .0136 .000 .2462 .1349 .0265 -.0143 45.000 -.0145 67.500 .0136 -.0034 90.000 .0060 .0085 .0766 .4247 .0383 .0034 -.0123 112.500 .0145 .0145 .0489 .0136 .0187 .0349 135.000 1980. .0392 .0247 .1839 157.500 .0400 167.000 180.000 .9507 .7394 .3959 .2615 .0898 .0225 .0291 .0280 .0302 .0443 .7181 .0303 197,000 .2557 .0963 .0280 .0531 210.000 .0914 .0400 220.000 225.000 .0738 .1392 232.000 X/LT .4250 .4500 .8000 .8500 .8750 .9000 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 THETA .000 -.0076 .0126 45.000 -.0129 -.0126 -.0136 .0097 -.0132 67.500 -.0170 .0090 -.0096 -.0077 -.0100 90.000 .0064 .0384 -.0059 .0192 -.0059 -.0017 .0067 .0260 .0077 .0689 .0077 .0263 112.500 .0068 .0051 .0424 .0332 .0384 .0332 . .0358 123.000 .0237 .0322 .0815 .0754 135,000 .0511 .0579 .0417 .0254 .0218 .0205 .0290 .0257 . 0594 157.500 .0563 .0552 .0280 .0236 .0280 .0329 .0169 .0213 .0154 .0159 .0315 .1033 161.000 .0476 .0389 166.000 .0311 .1438 180.000 .2231 .2002 .0552 .0487 .0269 .0225 .0216 .0154 .0468 .0280 .0231 .0209 .0253 .0509 .1664 197,000 .0260 210.000 .0355 .0227

.0377

.0216

DATE 20 APR 76 PAGE 31 TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) 01-T 5-S8N16 EXTERNAL TANK (RQ3TAA) MACH (4) =ALPHA (1) = 4.600 SECTION (I)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1150 151.000 . 1514 .1901 -.0137 180.000 210.000 .2604 4.600 ALPHA (2) = .000 PINE .66200-01 RN/L 1.2000 CPST6 1.8033 Q(PSI) =.98085 ** SECTION (1)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .0400 .3000 .3250 .3350 .3500 .3750 .4000 .0800 .1500 .2000 .2500 .2750 THETA .000 .3310 .1991 .0485 .0168 45.000 -.0160 67.500 .0103 -.0085 .0205 90.000 -.0060 .6129 .0077 .0094 .0597 .0538 .0035 112.500 .0120 .0112 .0137 .0069 -.0025 135.000 .0.120 .0129 .0103 .0120 157.500 .1804 167,000 .0162 180.000 .6796 .6767 .3169 .0140 .0261 .2007 .0556 .0114 .0151 .0151 .0140 197.000 .1991 .0641 .0151 210.000 .0602 .0261 220.000 .0195 225.000 .0600 232.000 .1103 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9800 THETA .000 -.0053 .0104 45.000 -.0154 -.0150 -:0026 67.500 -.0127 .0134 -.0050 -.0099 -.0040 .0219 -.0063 90.000 -.0102~.0050 -.0059 -.0034 .0071 .0035 .0347 .0117 .0061 112.500 -.0033 -.0050 -.0033 .0124 .0025 .0042 .0084 .0232 .0242 .0700 123.000 .0288 .0363 .0641 135.000 .0146 .0112 .0094 .0071 .0084 .0075 .0324 .0107 .0127 .0566 157.500 .0370 .0271 .0162 .0118 .0151 .0091 -.0031 -.0002 -.0052 -.0034 .0048 .0524 161.000 .0261 166.000 .0162 .0030 180.000 .2242 .1049 .0315 .0184 .0140 .0096 .0129 -.0013 .0016 .0005 -.0024 -.0059 .0188 .0764 197.000 .0271 .0041 .0957 210.000 .0105 -.0042 220.000 .7178 .0080

-.0135

-.0016

DATE 20 APR 75 . . TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK (ROSTAA) ALPHA (2) = .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9370 .9750 ATHETA 123.000 151.000 180.000 .0860 .1018 -.0303

.1734

PAGE

	Unit			140057	CD 3001101	- DATA	4111									
	-	2.5	. Je sia	,	UPW'	T 1059 (1	H+) 01-	T15-58N1	6 SOLID	RCKT. B	STR.	*	(RQ39	iaai (15 APR	76)
		REFE	RENCE DA	ATA									PARAMETRI	C DATA		
	LREF =	2690.0000 1290.3000 1290.3000 .0100	INCHES	XMRP YMRP ZMRP	= .1	DOOO INCH	iES				AR	1/L ≖	1.200	BETA	G	.000
	MACH (1) = 2.	360 A	LPHA (1) =	.000 PI	NF =	.43020	QIPS	[) = 1.	9721	RN/L	= 1.2000) CP	STG ≖	1.7053
•	SECTION	(:1350L1D	RCKT. B	ISTR		DEPENDEN	IT VARIA	BLE CP/C	PS							
	X/LSRB	.0000	0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
	PSI 90.000 180.000 225.000 247.500	1.0057		. 1273	.1296 .1263		. 1285 . 1403				0262	0275	0091	0186 .0558 .0370 .0257	.0120	.0012 1200
	260.000 270.000 315.000		.2336	1421	. 1445	.1604	.5885	. 7648	.61 ⁴ .7	0623	0727	0870	0110 0468	0233	0256	0284
	X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
	PSI 90.000 180.000 210.000 215.000 225.000	.0005 .0045	.0995 .4275	0279 .1258 0475	0189 0780	~.0277	.2342	1580	.1239 .0916 0142	1069	0715	.0380 1204 0808				
	240.000 247.500 270.000 315.000	.1250 .0539 .0987		0628	0687				0306 0265			0471	0400 .1318			
	MACH ()	() = 2.	360 <i>A</i>	NLPHA (a	· · · · · · · · · · · · · · · · · · ·	.000 PI	NF =	.43020	QIPS	[] = 1.	8721	RN/L	= 1.2000) CF	STG =	1.7063
	SECTION	(1)SOLID				DEPENDEN	JT VARIA	BLE CP/C	PS						•	
	X/LSRB	.0000		.0250	.0500	.0750		-	. 1150	.1300	. 1500	.2000	.3000	.4000	.5006	.6000
	PS! 90.000 180.000 225.000 247.500 260.000	.9916		.1094	.1134 .0674		.1136		.5389	• • • • • • • • • • • • • • • • • • •	0945	0648	0572	0356 .0202 .0206 .0364	.0173	.0025
	270.000 315.000		.2339	.1406	. 1527	.1593	.6882	.7895	-	0639	0901	0911	0639 0113	.0321	.0178	.0025

UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAA)

					11 1022 (11177 01	113.30141	0 30610	TOKT -			*******	3, 1, 1, 1		
MACH (1)	= 2.3	860. A	LPHA (2	!) = 5	.000					•	•	• •			
SECTION (1)50L10	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000 247.500 270.000 315.000	.0085 .1033 .1558 .1324 .0159	.1427 .3155 .2536	.0096	.0292	.0000	.1833	0872	.1098 .1251 0105 0472 0400	1175	0615	.0611 1225 0800 0669	.0643 0017 0452		•	
MACH (2)	= 2.9	950 A	LPHA (1) =	.000 P	INF =	.26525	Q(PS	I) = 1.	6156	RN/L	= 1.210	CP.	STG =	1.7529
SECTION (1150LID	RCKT. B	STR		DEPENDENT VARIABLE CP/CPS										
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.501	1.0872		.1061	. 1081 . 1224		.1088				.0010	0181	0386	0180 .0110 .0196 .0164	.0153	.0180 .0121
260.000 270.000 315.000		.2611	.1580	.0971	.1546	.1658	.9703	.5792	.0029	0186	0471	0434 0458	0125	0248	0232
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9500	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000 247.500	0023 .0019	.1092 .2562	0113 .1818 0174		0087	.2475	0040	.0497 .0701 .0259 0002 0272	0562	0339	.0563 0713 0438 0343	.0895 .0075			
270.000 315.000	.0014	.2707	0340	~.0508		•		0310	, •		٠	.0632			

PAGE 35

	, ,				wain	4,,,									
		T 1059 (IH4) 01-	T15-58N18	SOLID	RCKT. B	(RQ35AA)								
MACH (5) = 5.	950 A	ALPHA (2	:) = 5	.000 P	INF =	.26525	Q(PS	[) = 1.	6156	RN/L	= 1.210	0 CP	STG =	1.7529
SECTIO	N (1)SOLID	RCKT. E	BSTR		DEPENDE	NT VARIA	BLE CP/CF	- S							
X/LSRB	.0000	.0040	. 0250	.0500	.0750	.1000	.1 00	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.00 180.00 225.00 247.50 260.00 270.00	10 10 10 10	.2648	.0990 .1586	.1022	. 1538	.1047 .0681	.95:32	.5783	.0012	0431	0410	~.0456 ~.0435 ~.0166	0269 0029 0007 0034 0139	.0183	.0098 .0093
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9:50	.9300	.9400	.9500	.9600	.9900			
PSI 90.00 180.00 210.00	0 .0241 0	.1257 .2076	.0173 .0394	.0367	.0044	. 2395	0075	.0654 .1296 .0439	2007	0103	.1072	.0601 .0482			
215.00 225.00 240.00 247.50 270.00	10 10 10 .0779 10 .0494	.1713	.0579	0392 0527			0275	.0096 0261 0303	0603		0727 0384 0422	0402 0880.	-		
315.000 .0040 MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839 SECTION (1)SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS															
X/LSRB	.0000	.0040	.9250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 90.00 180.00 225.00 247.50 260.00	10 10 10		.0962	.0973 .1676		0210 .0107		2052		. 0749	.0263	.0352	0185 .0297 .0318 .0462	. 0250	.1389
270.00 315.00	10 .	.1821	.1104	1360	1614	.3853	.0021	.2967	0119	0199	0284	0175 0140	0010	0133	.0010
X/LSRB	.7000	.7800	.8000	.9000	.9108	.9200	.9250	.9300	.9400	.9500	.9600	.9900	•		
PSI 90.00 180.00 210.00 215.00	10 .1187 10	0243 .1148	.0016	.0362	. 1443	.0337	0298	0083 .0386 0060	0396	.0081	.0041	. 1991 . 0050			
225.00 240.00		.0736	0299	0072				0255 0298			0273 0340	0095			

UPWT 1059 (1H4) 01-T15-S3N16 SOLID RCKT. BSTR.

(RQ3SAA)

MACH (3) =3.700 ALPHA (1) = -5.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .9600 .9900 .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 247.500 .8287 270.000 .1894 -.0212 -.0386 -.0340 .0340 -.0400 315.000 .0000 CPSTG # 1.7839 = 1.2000MACH (3) = 3.700 .000 PINF = .13175 Q(PS1) = 1.2629RN/L ALPHA (2) = ...SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS .6000 .5000 X/LSRB .0000 .0040 ,0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 90.000 1.1944 .0946 .0946 .0946 -.0140 -.0104 -.0081180.000 .1328 .1080 .0257 225.000 .0077 -.0154 247.500 .0005 -.0001 .0138 .0204 .6477 260,000 -.0134 -.0147 -.0174 -.0147 270.000 .2968 .1849 .1106 .1430 .1706 .3724 .0015 -.0032 -.0218 -.0247 315.000 .9600 .9900 X/LSRB .9300 .9500 .7000 .7800 .B000 .9000 .9100 .9200 .92!;0 .9400 PSI 90.000 -.0059 .1057 -.0078 .0364 .0397 .0457 .0451 .0150 180.000 .0098 .1714 . 1449 .0122 .034B -.0079 210.000 -.0049 . 1432 -.0426 215.000 -.0329 225.000 .3592 -.0152 -.0256 .0062 ~.0269 -.0256 -.0252 240.000 -.0250 247.500 .0125 .0364 270.000 .0045 .2228 -.0188 -.0310 -.0265 315.000 .0025 CPSTG = 1.8033MACH (4) = 4.600 ALPHA (:1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .5000 .6000 .4000 X/LSRB .0000 .0500 .0750 .1000 .1100 .1150 .1300 . 1500 .5000 .3000 .0040 .0250 -.0123 90.000 1.3125 .1018 .0960 .0975 .0153 .0091 180.000 .1992 . 1564 .0323 225.000 .0317 .0255 .0367 .0298 247.500 .0031 .0255 .4699 260.000 .0178 -.0025 -.0116 -.0073 .0031 -.0030 .3179 . 1452 .2952 .0159 270.000 .1992 .1163 .1501

PAGE 37

				UPM	T 1059 C	!H4) OI-	T 5-58N1	6 SOLID	RCKT. B	STR.	•	(RQ3	CAAR		
MACH (4)	= 4.1	600 A	LPHA (1) = -5	.000								•		
SECTION (1)50L10	RCKT. E	STR		DEPENDE	NT VARIA	81.E CP/C	:PS						•	•
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PS1 315.000												0237			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900	•		
PSI 90.000 180.000 210.000 215.000 225.000	0123 .0143	.0632	0088 .1116	.0077	.0102	. 1378	.0194	.0067 .0433 .0363	0121	.0064	.0294 8210	0054			
240.000	64.55	.1412	.0443	0117				0136			0175	0198			
247.500 270.000 315.000	.0177 0021 0168	.1600	0039	0217				0201				.0372			
MACH (4)	= 4.0	600 A	LPHA (2) =	.000 P	INF =	.66200-	OI Q(PS	il) = .98	B085	RN/L	= 1.200	t CP	STG =	1.8033
SECTION (1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS.							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1:00	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	1.3494	·	.0925	.0900 .1355		.0889		4. 1 ====		.0179	0008	.0014	0170 0079 .0200	0011	.0217 .0133
270.000 315.000		. 3364	.2078	.1202	.1618	. 1544	.2988	.4155	.0179	.0160	0050	0087 0180	0129	0146	→.0095
X/LSR8	.7000	7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000 215.000	0100	.1010	.0051	.008!	.0010	. 1242	.0018	.0390	0182	.0018	.0249	.0317 .0175			
225.000 240.000 247.500 270.000 315.000	.0158 0011 0087	.1949	0009	0113				0143 0120 0160			0151 0151	0107 .0374			

(RQ39AB)

129.500

UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE

REFERENCE DATA PARAMETRIC DATA SREF = 2690.0000 SQ.FT. LREF = 1290.3000 INCHES .000 RN/L 3.000 BETA XMRP .0000 INCHES YMRP .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 CPSTG = 1.70633.0000 MACH (1) = 2.360 ALPHA (1) = .000 = 1.1969 Q(PSI) = 4.6665RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 . 1500 .1600 .1650 .1700 X/LE .0600 .0800 .1000 . 1250 .0050 .0200 .0400 .0500 PHI .0140 .000 .8480 .4186 .1423 .1715 .3586 .4341 .7518 10.000 .4196 .3404 .2924 20.000 24.500 39.000 . 1841 .3580 163.000 174.000 .6101 .6003 .5276 .8480 180.000 .2248 .1780 .1750 .2009 .5749 1.0000 1.0145 .9630 .9750 .8620 .9500 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 PHI .000 -.1209 -.1197 .0872 -.0409 2862 -.1088 .0416 -.0148 -.0051 23.000 .0047 24.000 .0509 31.500 .0607 33.100 ~.0097 35.000 .0473 40.000 .0260 -.0051 45.000 ~.0097 50.000 .0814 .0058 51.600 57.000 -.0055 60.900 -.0101 65.000 -.0175 -.0294 68.000 69.000 -.0231 79.300 -.0429 95.500 -.0328 - 0015 .0002 95.700 95.300 .1311 103.000 -.0294 -.0797 105.000 112.600 -.0264 -.0203 -.0148 117.500 .0958 120.900 127.900 .1950 .2142

PAGE 39

-.0489

DATE 20 APR 76

68.000

TABULATED SOURCE DATA - IH4

UPWT 1059 ([H4] 01-T15-S8N16 ORBITER FUSELAGE (RQ3BAB). MACH (1) = 2.360 ALPHA (1) = .000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .2000 .3000 .4000 .5000 .6000 .7800 8000 .8050 .8290 .8620 .9500 .9830 1.0000 1.0145 PHI 130.000 135.000 . 1449 .0252 .0162 -.0621 -.0143 139.600 . 1591 .0409 144.000 155.000 .1218 \ -.0387 180.000 .0420 -.0045 X/LB 1.0250 1.0500 PHI .000 -.1092 -.0888 = 1.7063 CPSTG MACH (1) = 2.360 ALPHA (2) =5.000 PINF 1.1969 Q(PSI) = 4.6665RN/L 3.0000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 X/LB .0000 .0050 .0400 .0600 .1000 . 1250 .1500 .1600 .1650 .1700 .0200 .0500 .0800 .7746 .2657 .1359 .000 .7805 .4189 .3514 .3752 .3161 -.0193 .2779 10.000 20.000 24.500 39.000 . 1424 .1180 163,000 .3159 174.000 .5339 .4451 180,000 .5052 .7805 .4698 .1603 .1209 .1421 .1457 .9630 1.0000 1.0145 X/LB .2000 .9750 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .000 .0378 .0069 -.0323 --.0424 .0413 .3007 -.1080 -.1213 -.1190 23.000 ~.0117 24.000 .0254 31.500 .0340 33.100 35.000 -.0277 .0278 40.000 .0034 -.0335 45.000 50.000 -.0390 .0443 51.600 -.0143 57.000 -.0328 -.0377 60.900 65.000 -.0417

•				ערש	IT 1059 (1	H4) 01-	T13-58N18	ORBIT	ER FUSEL	AGE		(RQ3)	BABi		
MACH (11	= 2.	.360 AI	LPHA (2) = 5	.000						•			•	
SECTION 1	1)CRB[]	ER FUSEL	AGE		DEPENDEN	T VARIA	BLE CP/CP	S.	•			•			
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 69.000		0451			•									• .	
79.300 95.500		10401			0508 0499		0144								
95.700 96.300	.0923	0263				•		· ·							
103.000 105.000	70025				0498										0841
112.600					-,0477							0314		0338	
120.800 127.900						.1358			.0681			•			
129.500 130.000								. 1541	.1203	.0157		0060			
135.000 139.600		0811			0408				.1181						
144.000 155.000	.1168		•									.0231			
180.000	.0162	0520			0310				•					•	
X/LB	1.0250	1,0500			٠.										•
PHI .000	0990	0739													
MACH (2)	= 2.	950 AI	LPHA (1) =	.000 PI	NF =	.66345	QtPS	1) = 4.	0415	RN/L	× 3.020	O CP	STG =	1.7529
SECTION (LIORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLF CP/CF	5					-		
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	0800	.1000	. 1250	.1500	.1600	. 1650	.1700	.1750	.1800
PHI .000	.8582	.3999	.1317	. 1611		. 1435	. 1910	.8186		0150	•	-	•		u.
20.000								.4080 .2239			•				
24.500 39.000		100		•				. 1625 . 1204							
163.000 174.000		* .										.6261	0105	.3578	rec.
180.000	.8582	2000	L 000	F000	.2128	5000	0000	1685	.1666	. 1920	.5513	0070	.6145 .9750	1.0000	1.0145
X/LB PHI	.2000	.3000	.4000	.5000	.6000	.7800	8000	.8050	.8290	.8620	. 2000	.9630	.aray	1,0000	1.0145
.000 23.000	.0665	.0314 .0229	.0271	.0022	0254		1833		•	* * .	0623	•	0723	0701	

					I IDLIT	1050 /14	IL) 01-	T15-58N16	OPRIT	ED ENGEL A	VCE.		(RQ3E	1AF3		
					UI HI	1000 (1)	147 01-	. 112-20KIO	ONDIII	Ch ruseur	1012		HUGGE	AU.		
CH (2)	= 2.9	350 AL	LPHA ([]=		000									•	
ECTION (1) ORB!TE	R FUSEL	AGE			DEPENDENT	VARIA	BLE CP/CP	3 .							
	.2000	***									0000	0500	.9630	.9750	1.0000	
-D	. = 000	.3000	. 4000	.50	טטט	.6000	.7800	.8000	.8050	.8290	.8620	.9500	. 5030	.5/20	1.0000	1,417
PHI											***					
24.000 31.500	.0511 .0597				•								1		August 1	
33.100	.0597	.0338												•		
35.000	063B				٠			::			4			1		
+0.000	.0846	.0355														
15.000		.0309	100		•	•								·- ,		
50.000	.1092									14.				Ant 1	• .	
51.600 57.000	٠,	0191												.0041		
30.900	2.0	.0188														
5.000		.0185									•					
58.000					1.			•						0204		
69.000		.0181										•				
79.300	1880 B					0206		0450	1. 1							
95.500 95.700	* *	.0263				0144		0100								
96.300	.0509	.0203					100							•		
03.000						0127					٠,					
05.000			* .											•		05
12.600	F					0135										-
17.500 20.800					٠.					6770		: :	.0014		.0010	
27.900							.2627			.0728						
29.500				1 -		•	- 505 /	•	,2053	• •						
30.000									,	.1306	.0231		. 2035			
35.000		~.0392		200		.0012			:							
39.600										.1377						
14.000 55.000	1700												.0387			
80.000	.1380 .0814	-,0211				.0007		•							and the same	
201000	10011	10211				.0007		:								
LB	1.0250	1.0500								٠.	:	11.	•			
				-		*		100				4.1				
PHI	4.										* .					

	:				UPW	T 1059 (1	IH4) 01-	(15- S8N1)	6 ORBIT	ER FUSEL	AGE		(RQ3	BAB)		
	MACH (2)	= 2.	950 AL	PHA (2) = 5	.000 P	INF =	.66345	Q(PS	1) = 4.	0415	RN/L	= 3.020	O CP	STG =	1.7529
	SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDE	NT VARIA	BLE CP/CI	PS .							
	X/LB	.0000	.0050	0200	.0400	.0500	.0600	.008	.1000	.1250	. 1500	.1800	. 1650	.1700	.1750	.1800
	PHI .000 10.000 20.000 24.500	.7669	.3767	.2199	.2664		.2389	. 2478	.6572 .1925 .1618 .1612		0382					
	39.000 163.000 174.000 180.000	.7669				.1510			.1279	.1105	. 129 4	.4117	,4884	.4733	.2758	.4412
:	X/LB	.2000	.3000	.4000	.5000		.7800	.2000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
	PHI .000 23.000 24.000	.0463	.0124 0007	.0023	0173	.0473		, 1923			•	0607		0713	0702	· .
	31.500 33.100 35.000 40.000 45.000	.0021 0080 .0195	.0021											•		
	50.000 51.600 57.000 60.900 65.000	.0741	0104 0135 0152											0227		
	69.000 69.000 79.300 95.500 95.700 96.300	.0671	0155 .0066	· :.		0411 0416		0187	÷		•	* *** * * *		0337		
	103.000 105.000 112.600	.00/1				0391 0381										0572
	117.500 120.800 127.900 129.500						.0687		.0860	.0421			0140		0148	
	130.000 135.000 139.600 144.000		0491			0300				.0768	.0090		0019			
	155.000 180.000	. 1004 . 0460	0366			0124			•		•	• • .		. · · .		-

PAGE

(RQ3BAB)

UPWT 1059 (IH4) 01-T15-S9N18 ORBITER FUSELAGE

5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE OP/CPS

X/LB 1.0250 1.0500

PHI

.000	0659	0508	-										·		
MACH (31. = 3.7	00 AL	PHA (1)	= -10	.000 PI	NF =	.32922	Q(PS)) = 3.1	550	RN/L	= 3.000	B CP	STG =	1.7839
SECTION	(1)ORBITE	R FUSELA	/GE		DEPENDEN	IT VARIA	BLE (P/CP	S							• .
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.00 30 .	.1000	. 1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000		.5358	.1914	.2026		. 1954	.1164	.7911 .4815 .1317 .1154 .1342		.0298				.5973	
163.000 174.000 180.000)	. •			.4123			.3451	.3396	.3776	.9124	1.0300	1.0203	.5575	.9480
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000)) .0784	.0364 .0430	.0575	.0591	.0413		.2492				0292		0444	0425	
31.500 33.100 35.000 40.000 45.000	0.0679 0.0712	.0600 .0675 .0658			•								•		
51.600 51.600 57.000 60.900 65.000)))	.0410 .0402 .0303				•				٠.		•	.0479		
68.000 69.000 79.300))	.0229			.0323		.0269	4 · .	•				.0233		
95.500 95.700 96.300 103.000)) .0662)	.0161			.0409		.vebs								0366
105.000 112.600 117.500 120.800))				. 0464				.1448			.0334		.0373	

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAB)

	MACH (3)	= 3.	700 A	LPHA (1)	= -10	.000										
	SECTION (DORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/C	:PS							
	X/L8	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	PHI 127.900 129.500 130.000 135.000 139.600 144.000 155.000	.2650 .1708	0015			.0322	.3446		.3190	.2276 .2340	.0694		.0326			
	X/LB	1.0250	1.0500													
	PHI .000	0432	0412													
	MACH (3)	= 3.	700 A	LPHA (2)	= -5.	.000 P	INF =	.32922	Q(PS	1) = 3.1	550	RN/L =	3.000	O CP	STG =	1.7839
	SECTION (100RB1T	ER FUSEL	AGE		DEPENDE	NT VARI	BLE CP/C	:PS					-		
	X\rB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	. 1700	.1750	.1800
	PHI .000 10.000 20.000 24.500 39.000	1.0509	.4663	.1598	.1686		.1631	.1140	.8252 .4064 .1278 .1062 .1065		.0108			•		
	163.000 174.000												.8480		.4826	
	180.000	1.0509				.2980			.2414	.2373	.2700	.7340		.8466		.7999
•	X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	PH! .000 23.000 24.000 31.500 33.100 35.000	.0732 .0280 .0246	.0249	.0485	. 0354	.0148		.1699				0305		0431	0423	
	40.000 45.000 50.000 51.600	.0605	.0723 .0686	· ·							٠.			.0153	•	
	57.000 60.900		.0279 .0273					-								

						•										
	DATE 20 AR	R 76		TABULATE	D SOURCE	DATA -	IH4				•				PAGE	45
					UPWI	1059 (1	(H4) Q1-	T15-SBN16	ORBITE	R FUSEL	AGE		(RQ3	(BAS)	•	٠
	MACH (3)	= 3.	700 A	LPHA (2)	= -5.	.000			٠.							
	SECTION (1)CRBIT	ER FUSEL	AGE		DEPENDEN	T VARIA	BLE CP/CP	S	•			• •			
	X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	PHI								•							
	65.000 68.000		.0256				4						-	0035		
	69.000 79.300	•	.0140			.0163				÷, *	•		,		. 1 - 1	
	95.500 95.700		.0134			.0200		.0030			•	-	•			
	96.300 103.000	.0614				.0195										
	105.000 112.600					.0193							•			0362
	117.500 120.800					+0,135				1200			.0212		.0210	
	127.900						.1612			.1206					•	
	129.500 130.000								.2078	.1870	.0685		.0263			
	135.000 139.600		0073			.0185				. 1993	-					
	144.000 155.000	.2084											.0607			
	180.000	.1561	.0166			.0087							•		•	•
	X/LB	1.0250	1.0500													
	PHI .000	0422	0402													
						600 51	r a lime	20000	0.455	·	.ecn		: - 7.000f		CTC -	1.7839
	MACH (3)			LPHA (3)			INF =	.32922) = 3.	1550	RN/L	= 3.0000	ı CP	STG =	1.7035
:	SECTION (ER FUSEL	AGE		DEPENDEN		HLE CP/CP	5				. *			
	X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
	PHI .000	.8682	.4174	.1841	.1417		. 1502	.2343	.7194		0075	-				
	10.000						7.7.7	,	.2913 1869							
	24.500 39.000								.1316							
	163.000								.0050				C2117		.3559	
	174.000 180.000	.8682				.2023			. 1555	. 1554	.1791	.5217	.6243	.6257		.5998

UPWT 1059 (IH4) 01-)15-S8N16 ORBITER FUSELAGE

(BOZBAR)

SECTION	DORBIT	ER FUSELA	GE		DEPENDE	NT. VARIA	ELE CP	/CPS								
X/LB	.2000	.3000	4000	.5000	.8000	.7800	. 800	0.	8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI			1								•	0751		01.07	0402	
.000 23.000	.0619	.0118 .0230	.0285	.0149	0028		.116	7				0351		0423	040=	
24.000	.0101	.0230										•				
31.500	.0089						•									
33.100		.0394			• • • •		·	•	1						. *	
35.000	.0046	au sici						100							100	
40.000 45.000	0170	.0438 .0466												1		
50.000	.0469	.0400														,
51.600														0073		
57.000		.0253				. :										
60.900 65.000		.0150 .0144				· .									. •	
68.000	- *	.0144			. :									0196		
69.000	1.1	.0080								100						
79.300					0079				,							
95.500					0059		014	0								
95.700	050	0011	•		•							. 1				
96.300 103.000	.0478	-			0059					1.1	. - ·					
105.000			1		0039	•						4.4				0421
112.600					0061			. :								
117.500													0027		0025	
120.800										.0792	. ' .		. :		·	
127.900 129.500			**			.2120			1905							
130.000								•	1200	.1277	.0309		.0022			
135.000		023B			0021											
139.600							٠.			.1102		* .				
144.000			-				•				*		,0307			
155.000	.1465	0000							4 1 1	1						
180.000	.1022	0082			0084				•		¥				•	
X/LB	1.0250	1.0500								 **A ** ** ** 				•		

TABULATED SOURCE DATA - 1H4

PAGE ORBITER FUSELAGE (RQ3BAB) UPWT 1059 (1H4) 01-T 5-S8N18 CPSTG = 1.7839ALPHA (4) =3.0000 3.700 5.000 PINE 35955 Q(PSI) = 3.1550RN/L SECTION (I) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 X/LB .0000 .1600 .1650 .1700 .1750 .0050 .0200 .0400 .0500 ,0600 .0800 .1000 .1250 .1500 PHI .000 .3553 .0365 .0351 .0382 .0683 .8485 .5124 .2249 .1752 .1057 .0882 .0033 10.008 20.000 24.500 39.000 163.000 174.000 .2508 .4306 180.000 .8485 .0987 .4429 .4329 .1356 .1013 .1174 .3403 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 PHI .000 .0206 .0215 .1119 -.0349 -.0404 -.0373 .0121 -.0025 -.0054 23.000 24.000 .0131 .0134 31,500 .0068 33.100 35.000 .0062 .0044 40.000 .0252 .0004 45.000 .0056 50.000 51.500 57.000 60.900 65.000 .0319 -.0243 .0053 .0053 .0052 -.0280 69.000 .0052 79.300 -.023995.500 95.700 -.0232 -.0243 -.0060 96.300 .0507 103.000 -.0236 -.0403 112.600 117.500 120.800 -.0241 -.0052 -.0064 .0337 127,900 .0297 129.500 .0702 130.000 .0641 .00B3 -.0087 135.000 -.0241 -.0314 139.600 .0672 144.000 .0049 155.000 .0982 180.000 .0614 -.0155 -.0152

120.800

UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAB)

3.700 ALPHA (4) = 5.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 -.0286 -.0225 CPSTG = 1.8033MACH (4) = 4.600 ALPHA (1) = -10.000 PINF= .16565 Q(PSI) = 2.4532RN/L = 3.0000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1700 .1800 X/LB .0000 .0050 .0200 .0400 .0600 .0800 .1000 .1250 .1500 .1600 .1650 . 1750 .0500 PHI .000 1.3880 .5926 .1995 .1851 .1835 1179 .7367 .0501 10.000 .3972 .1055 20.000 24.500 .1201 39.000 .1300 .6012 163.000 174,000 1.0789 1.0624 .8537 180,000 1.3880 .4406 .2963 . 2869 .3252 .9155 X/LB .2000 .3000 .8290 .9500 .9630 .9750 1.0000 1.0145 .4000 .5000 .6000 .7800 .8000 .8050 .8620 PHI -.0257 -.0235 -.0123 .000 .1161 .0384 .0502 .0566 .0361 .2155 23.000 .0413 24.000 .0817 .0740 31.500 33.100 .0461 35.000 .0633 40,000 .0644 .0388 45.000 .0377 50.000 .0809 .0432 51.600 57.000 .0363 60.900 .0281 65.000 .0273 68.000. .0208 69.000 .0208 79.300 .0290 95.500 .0307 . 0299 95.700 .0174 96.300 .0884 103.000 .0309 -.0234 105.000 112.600 .0279 .0340 117.500 .0326

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 PAGE (RQ39AB) UPWT 1059 (IH4) 01-T1E-SBN16 ORBITER FUSELAGE 4.600 ALPHA (1) = -10.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .9750 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .3000 .8050 .8290 .8620 .9500 .9630 PHI 127.900 .3304 129.500 .2871 130.000 .1791 .0869 .0252 135.000 .0165 .0293 139.600 144.000 .1927 .0401 155.000 .2593 180.000 .1794 .0170 .0305 X/LB 1,0250 1.0500 PHI -.0247 -.0246 Q(PSI) = 2.4532RN/L = 3,0000 CPSTG = 1.8033 MACH (4) =4.600 ALPHA (2) = -5.000 PINF .13565 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1700 .1750 X/LB .0000 .1500 .1600 .1650 .0050 .0200 .0400 .0500 .0600 .3800 .1000 . 1250 PHI .000 1.1460 .5089 .1682 .1702 .1706 .1301 .8423 .0260 .3150 10.000 20.000 .1085 24,500 .1154 39.000 163.000 .1077 .5355 174,000 .9458 .8765 180.000 1.1460 .3106 .2476 ,2447 .2795 .7836 .9514 .9750 1,0000 1.0145 X/LB .8290 .9500 .9630 .2000 .3000 .4000 .5000 .6000 .7800 .13000 .8050 .8620 -.0240 -.0236 .0626 .0274 .0394 .0236 -.0128 .000 .0391 . 428 23.000 .0344 24.000 .0219 31.500 33.100 .0201 .0377 35.000 40.000 45.000 50.000 .0241 .0417 .0315 .0311 .0626 :0070 51.600 .0279 57,000

60.900

.0276

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					UPW	IT 1059 (1	H4) 01-1	F15-S8N1	6 ORBITE	R FUSEL/	AGE		(RQ3B)	7 B)		
	MACH (4)	= 4.6	JA 008	LPHA (2)	≓ - 5	,000										
	SECTION (1) ORB (TE	R FUSEL/	AGE		DEPENDEN	NT VARIAE	BLE CP/C	PS	÷				•		
	X/LB	.2000	3000	.4000	.5000	.6000	.7800	.6,000	.8050	.8290	.8620	.9500	.9630	.9750 1	0000	1.0145
	PHI 65.000 68.000		.0231								•			0010		
	69.000 79.300 95.500		.0143			.0177	•	.(059								er e
	95.700 96.300 103.000	.0709	.0147			.0187			. •							
•	105.000 112.600 117.500					.0179							.0241	•	0250.	0238
	120.800 127.900 129.500 130.000			· ·			.1697		.1752	.1402	.0780		.0266			
	135.000 139.600 144.000 155.000	.2313	.0009			.0027				.1593			.0460			
	180,000	. 1684	.0161	•		.0126										
	PHI .000	1.0250	0238				·		÷ .						•	
	MACH (4)	= 4.6	500 A1	LP#A (3)	=	.000 P	INF =	.16565	Q(PSI) = 2.4	4532	RN/L	= 3.0000	CPSTO	3 *	1.8033
	SECTION (1)ORBITE	ER FUSEL,	AGE		DEPENDE	NT VARIA	BLE CP/C	PS							
	X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	. 1650	.1700	. 1750	.1800
	PHI .000 10.000 20.000	.9125	.5296	. 2202	.1329		. 1515	.1724	.6100 .1504 .1247	• •	.0081	٠.				
	24.500 39.000 163.000								. 1027 . 0844				• * * * * * * * * * * * * * * * * * * *		.3616	
	174.000 180.000	.9125	٠			.2035			. 1549	. 1574	. 1796	.4942	.B144	.6656		.6603

PHI

TABULATED SOURCE DATA - 1H4

PAGE 51

SECTION	(DORBIT	ER FUSEL	AGE		DEPENDEN	NT VARIA	FILE CP/CF	- S							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI				*											•
.000	.0484	.0128	.0229	.0229	.0094		080				0201		0280	0272	
23.000 24.000	.0136	.0235	•												
31.500	.0136														
33.100	10100	.0297							•						
35.000	.0213														
40.000	.0396	.0275													
45.000	. : <u>_</u>	0246													
50.000	.0561												0095		
51.600		0170											~.0055		
57.000 60.900		.0132			•										
65.000		.0135		* *	•										
68.000		.0133											0128		
69.000		.0135													
79.300					0013										
95.500		100			.0003		0103	•							
95.700		.0132													
96.300	.0568				656						-				
103.000			•		.0007										0248
105.000 112.600					0002										.02,0
117.500					0002							0002		0005	
120.800									.6777						
127.900						.1152									
129.500								.1563						•	
130.000									.1146	.0330		.0025			
135.000		0101			0073										
139.600									.0852			0000			
144.000	1500											.0084			
155.000 180.000	. 1522 . 1 193	.0033			0079										
100.000	.1132	.0035	-		-,0079						•				
X/LB	1.0250	1.0500													
	and the second of the second														

				UPWT 1059	(1H4)	01-1	61MB2-6.1	ORBITER FU	SELAGE			(RQ3BAB)			
MACH (4) (=	4.600	ALPHA (4) =	5.000	PINE	=	16565	Q(PS1) =	2.+532	RN/L	=	3.0000	CPSTG	=	1.8
SECTIO	N (1)0	RBITER FU	JSELAGE	DEPE	NDENT V	ARIA	S.E CP/CPS								

MACH (4)	= 4.	600 AL	PHA (4) = 5	.000 P	INF =	16565	Q(PS)	1) = 2.4	532	RN/L	= 3.000	о ср	STG =	1.8033
SECTION (110RBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BILE CP/CF	95						4	
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24,500 39.000	.8859	.5658	.2696	.1377		.0486	, 0609	.1614 .0086 .0104 .0086 .0535		.0112				.2270	
174.000 180.000	.8859				.1303			.0919	.0970	.1091	.2761	.3569	.4301		.4419
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PH1 .000 23.000 24.000	.0229	.0251 .0170	.0143	.0112	0019		.0947				0197		0262	0239	
31.500 33.100	. 0285	.0060													
35.000 40.000 45.000	.0388	.0016 .0049													
50.000 51.600 57.000 60.900 65.000	.0325	.0036 .0040 .0038											0156		
68.000 69.000		.0033											0154		
79.300 95.500 95.700 96.300	.0477	.0032			0157 0154		0156								
103.000 105.000					0154										0273
112.600 117.500 120.800					0154				.0304			0089		0059	
127.900 129.500						.0093		.0435			•				
130.008 135.000 139.600		0160			0154			10.00	.0475 .0376	.0060		0091			
144.000 155.000 180.000	.0912	0106			0159							0052			
		.0.00			.0.05										

TABULATED SOURCE DATA - 1H4

PAGE 53

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAB)

ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB

1.0250 1.0700

PHI

.000 -.0223 -.0191

UPWT 1059 (1H4) 01-T15-S8N16 OR9. UPPER WING

(ROSUAS) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. .000 .0000 INCHES RN/L = 3,000 BETA LREF = 1290.3000 INCHES BREF = 1290.3000 INCHES YMRP = .0000 INCHES ZMRP = .0000 INCHES SCALE = .0100 MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665RN/L ≈ 3.0000 CPSTG = 1.7063 SECTION (1) OPB. UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM .4000 .6000 .8000 X/CW -.050 .0727 .200 -.0434 -.0406 .600 -.0906 -.1074 .800 -.1010 .900 .1250 -.0978 .950 -.0753 MACH (-1) = 2.360 CPSTG = 1.7063 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L □ 3.0000 SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA\BM .4000 .5000 .8000 X/CW .050 .0521 .200 -.0708 -.0547 -.0058 .600 -.1157 -.1157 .800 -.1127 .900 .1308 -.1073 .950 -.0951 MACH (2) = 2.950 ALPHA (1) = CPSTG = 1.7529 .000 PINF Q(PS1) = 4.0415RN/L ≈ 3.0200

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

SA\BM .4000 .6000 .8000 X/CW .0803 .050 . 0544 -.0179 -.0019 .600 -.0649 -.0656

.800 -.0655 .900 .0597 -.0528 .950 -.0524

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PAGE
DATE 20 APR 76
                       TABULATED SOURCE DATA - IH4
                                                                                                (RQ3UAB)
                                    UPWT 1059 (IH4) 01-T15-S8N16 ORB. UPPER WING
                                                                                     RN/L
MACH (2) =
               2.950
                       ALPHA ( 2) =
                                      5.000
                                            PINF
                                                       .68345
                                                                  Q(PSI) = 4.0415
 SECTION ( 1) ORB. UPPER WING
                                    DEPENDENT VARIABLE CP/CPS
2Y/BW
           .4800
                  .6000
                          .8000
 X/CW
    .050
           .0686
    .200
          -.0337 -.0183
                          .0204
    .600
          -.0718 -.0720
    .800
                 -.0698
               .0656 -.0617
    .900.
               -.0601
  .950
                                                                                     RN/L = 3.0000
                                                                                                         CPSTG
                                                                                                               = 1.7839
MACH (3) =
              3.700
                       ALPHA ( 1) = -10.000 PINF
                                                                  Q(PSI) = 3.1550
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SA/BM
           .40G0
                  .6000
                          .8000
 X/CW
  . 050
           .1705.
  . 200
           .0329
                  .0606
                          .1326
   600
          -.0204
                 -.0229
   .800
                  -.0265
    .900
                  .0386
                        -.0049
 .950
                  -.0102
                                                                                            = 3.0000
                                                                                                         CPSTG = 1.7839
               3.700 ALPHA (2) = -5.000 PINF = .32922
                                                                  Q(PS1) = 3.1550
MACH ( 3) =
SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SA\BM
                  .6000
           .4000
                          .8000
 X/CW
    .050
           .1089
                  .0334
    .200
           .0172
                          .1019
    .600
          -.0289
                 -.0324
    .800
                  -.0341
    .900
                  .0402 -.0153
```

.950

-.0216

.900

.950

.0365 .0097

-.0031

	6	
		PAGE 57
	(RQ3UAB)	
RN/L	= 3.0000	CPSTG = 1.8033
RN/L	= 3.0000	CPSTG = 1.8033
	and the second second	

CPSTG = 1.8033

3.0000

RN/L

2Y/BW .4000 .6000 .8000 X/CW . 050 .0657 .200 -.0024 .0138 .0616 ,600 -.0236 -.0211 .800 -.0214 .900 .0369 .0003 ,950 -.0102 MACH (4) = 4.600 ALPHA (4) = Q(PSI) = 2.45325.000 SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CF/CPS SA/BM .4000 .6000 .8000

TABULATED SOURCE DATA - IH4

ALPHA (2) = -5.000 PINF

UPWT 1059 (IH4) 01-T15-SBN16 ORB. UPPER WING

= . 16565

DEPENDENT VARIABLE CP/CPS

DEPENDENT VARIABLE CP/CPS

.000 PINF

Q(PSI) = 2.4532

Q(PSI) = 2.4532

DATE 20 APR 76

MACH (4) =

SA/BH

X/CH

050

.200

.600

.800

.900

.950

X/CW .050

.200

.600

.800

.900

.950

4.600

.6000 .8000

.1034

.0046

.0362

.0346

-.0157

-.0155

0369

~.0057

MACH (4) = 4.600 ALPHA (3) =

SECTION (1) ORB. UPPER WING

.4000

.1033

.0194

-.0193

SECTION (1) ORB. UPPER WING

.0457 -.0166

-.0288

-.0023

~.0257

-.0256

-.0124

.0357 -.0063

.003

.004

.005

UPWT 1059 (IH4) 01-T 5-S8NI6 ORB. LOWER WING

(RG3LAB) (15 APR 76) REFERENCE DATA PARAMETRIC DATA .000 SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES RN/L 3.000 BETA LREF = 1290.3000 INCHES YMRP = .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES .0100 CPSTG = 1.7063 MACH (1) =2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665RN/L = 3.0000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .8500 .9500 .9980 .6000 .7500 .3011 .3480 .4000 .5000 X/CW .000 .2036 .3224 -.0527 .2902 .001 -.0360 -.0228 .1988 .0339 .0281 .002 .0034 .0194 .003 .3728 .3443 .004 .0872 .0738 .005 .0151 .0176 .025 .0681 .0348 .0383 .045 .0667 .0043 .0285 .0315 .100 .153 -.0295 .0000 .200 -.0148 .299 -.0089 .302 .0018 .0177 .1502 .428 ,444 .0004 . 1754 .487 .559 . 1954 .600 .1911 .700 .1583 .736 .2961 .800 .0740 .850 .0259 .900 -.0466 -.0178 .0400 .0408 2.360 = 3,0000 CPSTG = 1.7063MACH (1) = ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665RN/L SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS 2Y/8W .3011 .3480 .4000 .5000 .8500 .9500 .9980 .6000 .7500 X/CH .000 . 3553 -.0869 .3559 .00: -.0506 .0460 .2654 .0999 .3609 .0982 .002 .0582 .0867

.3259

.1554

.0873

.3984

. 1596

DATE 20 AP	R 76		TABULATE	D SOURCE	E DATA -	IH4		7 7		•				r	PAUL	23
· .				UPW	T 1059 (1	IH4) 01-	T1 5-58N16	orb. t	OWER WI	NG			(RQ3LAB)			
MACH (1)	= 2.	360 A	LPHA (2)	= 5	.000				* .							
SECTION (1)ORB. 1	LOWER WI	NG		DEPENDEN	NT VARIA	BLE CP/CF	°S	· ·							
SA\8M	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .025 .045				.0804 .0785	.0853		1072					,				
.100	0483			.0703		.0462		.1029	.1083	•						
.177 .200				.0018	.0270				,						<u>.</u>	
.299 .302 .428	.0179			.0809		.2416	0836			. <i>.</i>			• ,			
. 444 . 487 . 559	.0055			.2912	.2681					•						
.600 .700 .736	,3227					.3097 .2350						÷				
.900 .950 .900	,3567			0736	•	.1147 .0539 .0028	.0828		.1118		_ '	,	•			
MACH (2)	= 2.	950 A	LPHA (11) =	.000 . PI	INF =	.66345	Q(PS)	() = 4.	0415	RN/L	· =	3.0200	CPSTG	≠ .	1.7529
SECTION (1)ORB.	LOWER WI	NG		DEPENDEN	NT VARIA	BLE CP/CF	°S							-	
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .002		.0031	0078		.2070	.3170 .0872 .0484	. 3235	.3471 .0659 .0517		0225	. •					
.003 .004 .005 .025	· .			.0106	. 0745	.3919 .1298 .0683	.0781	.3657 .1273 .05!9								
.045 .100				.0125		.0368		.0641	.0677	. * .			• •	•		•
.153 .177 .200	0061			.0395	.0267					,					-	
.299 .302 .428	0106			.0273		.0378	.0401					•				
. 444 . 487 . 559	0091			. 1497	. 1254							·	· / .			
.600						.1240										

.600 .700

.736

.800 .850

.900

1905

(RQ3LAB). UPAT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING-MACH (2) = 2.950 ALPHA (1) =.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 .9500 SA\8M .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 X/CM .700 .1576 .1788 .736 .1185 .800 .850 .0699 -.0338 . 7641 -.0217 . .900 .0253 CPSTG = 1.7529= 3.0200 RN/L MACH (.2) = 2.950 ALPHA (2) = 5.000 PINF = .63345 Q(PSI) = 4.0415SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 SA/BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 X/CM ~.0510 .000 .3584 .3769 .001 -.0224 -.0226 .2763 .1240 .3678 .1205 .0990 .002 .0738 .003 .3984 .3447 .1748 .1865 .004 .005 .0957 .1029 . 192 .025 .0951 .0942 .045 .0942 .0638 .1135 .1165 .100 . 153 -.0226 .177 .0421 .200 .299 .302 .0273 -.0239 .0423 .0783 .428 .444 .0581 .0373 .487 .1591 .559 .1848

.2002 .2578

.1664

.1025

.0486

. 392

.0169

-.0386

DATE 20 API	₹ 76		TABULATE	D SOURC	E DATA -	IH4								. F	AGE 51
				UPW	T 1059 (1	H4) 01-	T15-S8N16	ORB. L	OWER WI	NG			(RQ3LAB)		
MACH	= 3.7	00 AL	_PHA (1)	= -10	.000 Pi	INF =	.36922	Q (PSI) = 3.	1550	RN/L	= 3	.0000	CPSTG	= 1.7839
SECTION (110RB. L	OWER WIN	1G		DEPENDEN	NT VARIA	BLE CP/CP	S		•	* •				
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					•
X/CM							•							•	
.000 .001		.0475	.0226		.2062	.2990 .0430	.2736	.3469 .0392		.0002			*		•
.002 .003						.0232 .4900		.0309 .4594			٠			,	
.004 .005						.091 .0284		.0614 .0296			•			•	
.025 .045	·			.0249	.0157	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.0324				•			,	
.100				.0312		.0384		.0281	.0304				*		
.153	,0462				.0270				. •						
.200 299	.0325			.0591											•
.302	.0323			.0557			.0319				•				
.428 ,444	.0577					.0437									
.487 .559				. 1929	.1813										
.60D						.1138									
.700 .736	.2866					.1026					• •				•
.800 .850						.0921 .0667									
.900				0161		.0384	.0334		.0055					•	
MACH (3)	= 3.7	'00 AL	_PHA (2)	= -5	.000 P	INF =	.32322	Q(P5)) = 3.	1550	RN/L	= 3	.0000	CPSTG	= 1.7839
SECTION (1)OR8, L	OWER WIR	NG		DEPENDE	NT VARIA	BLE XP/CP	S							
2Y/8W	,2500	.3011	.3480	4000	.5000	.6000	.7/500	.8500	.9500	.9980					
X/CM															
.000		:0329	.0102		.1605	.2404 .0300	.2323	.3360 .0352	•	0016		•			
.002 200	. `					.0016 .3869		.0190 .4269					•		. :
004				. •		.0699	2	.0622	•	\$100 L					
.005 .025				.0154	.0091	.0114	.0/343	.0190							
.045 .100				.0188		0025		.0194	.0283						
.153 .177	.0229				.0018										
.200				.0039	. 0010										
.299	.0179										+				

DATE 20 APP	₹ 76		TABULAT	ED SOURC	E DATA -	114	•							FA	JE 0E
				UPW	T 1059 (1	[H4) DI-	T15-58N18	ORB.	LOWER WI	ŅG			(RQ3LA	3)	
MACH (3)	= 3.	700 AI	LPHA (2) = -5	.000								-		
SECTION (170RB. (LOWER WII	NG		DEPENDEN	T VARIA	BLE (P/CF	PS .							
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7£00	.8500	.9500	.9980				•	
X/CW .302 .428 .444	.0117			.0265		. 0367	.0537								
.487 .559 .600 .700 .736	.1739			.1274	.1103	.0941 .0739	- 		-			. :			
.800 .850 .900				0167		.0826 .0573 .0300	.0337		~.0109						
MACH (3)	= 3.1	700 A1	LPHA (3) =	.000 P	INF =	.32922	QIPS	I) = 3.	1550	RN/L	•	3.0000	CPSTG =	= 1.7839
SECTION (DORB. I	LOWER WIN	NG		DEPENDEN	NT VARIA	Bre colc	95							
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
W2/K 000 000 000 500 500 400		.0095	0043		. 1457	.2318 .0343 .0055 .3337	.2815	.3361 .0646 .0510 .3719		0115					
.005 .025 .045 .001				.0086 .0112	.0129	.0161	.0426	.0531	.0573				-		
. 153 . 177 . 200 . 299	.0003			0081	.0050						÷		-	•	
.302	0054			.0071		.0432	.0230				•	•	-		
.497 .559 .600 .700 .736	.1296			.1093	.0675	.0853	•								
.800 .850 .900		·		0084		.1088 .0760 .0413	.0477		0143						

DATE 20 APR 7	76	TABULATI	ED SOURCE D	DATA - IH	14					•	•		P	AGE	63
			UPWT 1	1059 (1H4) OI-TI	5-50116	ORB. LO	WER WIN	IG			(RQ3LAB)			
MACH (3) =	3.700	ALPHA (4	= 5.00	DO PINF	· = .	3292:2	Q(PS1)	= 3.1	550	RN/L	= '	3.0000	CPSTG	=	1.7839
SECTION (1)	ORB. LOW	IER WING	DE	PENDENT	VARIABL	E CP/CPS	3								
SA/BM .	.2500 .	3011 .3480	.4000 .	.5000 .	6000	.7500	.8500	.9500	.9980		-				
X/CW .000 .001 .002 .003 .004		00830114	•	. 2310	3135 0844 0437 3562 1400	.3593	.3829 .1196 .0864 .3520		0288		•				
.005 .025 .045 .100	.0057		.0180 .0284	0625	0590 0359	.0916	.0950	.1041		٠.		· · · · · · · · · · · · · · · · · · ·			
.177 .200 .299 .302 .428	.0101		.0079 .0200	.0221	0451	.0754									
	.0000		.1224	.0961	0751 1591								•		
	. 1206		0114	•	1574 1109 0655	.0619		.0074				·			•
MACH (4) =	4.600	ALPHA (I) = -10,00	O PINE	·	16525	Q(PSI)	= 2.4	532	RN/L	**	3.0000	CPSTG	=	1,8033
SECTION (1)	ORB. LOW	ER WING	DE	PENDENT	VAR I ABL	E CF/CPS	3								
2Y/BW	.2500 .	.3011 .3480	.4000	.5000 .	6000	.7500	.8500	.9500	.9980						
.002 .003 .004 .005 .025		0465 0358	.0362	. 2500	3593 0677 0300 5690 1251 0446	.3227	.4339 .0600 .0371 .5640 .0937	•	.0117		·	•			
.177	.0490			. 0240	.0243		.0417	.0472				• •			
.200 .299	.0321		.0254												

OR POOR QUALITY

407/40

UPWT 1059 (1H4) 01-T15-S8.416 ORB. LOWER WING (RQ3LAB) MACH -4.600 ALPHA (1) = -10.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP'CPS SA\BM .2500 .3011 .3480 .4000 .5000 .6000 .750) .8500 .9500 .9980 X/CH .302 .0385 .04013 .428 .0385 ւկկկ .0328 .487 .0828 .559 .600 .1823 .0973 .700 .1234 .736 .800 .2291 .1101 .850 .0009 .900 .0102 .0502 .0357 .0075 MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565Q(PS1) = 2.45323,0000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP. CPS SA/6M .9980 .2500 .3011 .3480 .4000 .5000 .6000 .750n .8500 .9500 X/CM .000 .2597 .3832 .0069 .0483 .0362 .1715 .3041 .0579 .0208 .002 .0357 .003 .3878 .4634 .004 .0936 .0938 .0300 .0408 .025 .0234 .0289 .0476 .045 .100 .153 .177 .200 .0227 .0142 .0395 .0465 .0322 .0097 .0057 .0175 .302 .0135 .0185 .428 .0384 .0168 .487 .0519 .559 .600 .700 .1028 .0704 .0475 . 1489 .736 .0708 .800 ,850 .0545 .900 -.0080 .0335 .0285 .0040

DATE 20 APF	R 76		TABULATE	D SOURC	E DATA -	IH4								· P.	AGE I	65
				UPW	IT 1059 (1	IH4) 01-	T:5-58N16	ORB. L	OWER WI	NG			(RQ3LAB)			
MACH (4)	= 4.8	500 AI	LPHA (3)	6	.000 PI	INF =	16565	a (PS)) = 2.	h532	RN/L	=	3.0000	CPSTG	= 1.1	8033
SECTION (1)ORB. L	OWER WII	NG		DEPENDEN	NT VARIA	BLE CP/CF	PS			•					
5A\8M	.2500	.3011	.3480	.4000	.5000	.5000	.7500	.8500	.9500	.9980			•			
X/CW .000 .001 .002 .003		.0154	.0051		. 1570	.2557 .0532 .0216 .3305	.2812	.3479 .0710 .0508 .3872	·· .	0018						
.005 .025 .045 .100			•	.0158 .0158	.0334	.0993	.0602	.0508	.0576		· · · · · ·					
.153 .177 .200 .299	.0117			.0026	.0127							•				
.302 .428 .444 .487	.0030			.0134	.0454	.0410	.0316									
,559 ,600 ,700 ,736 ,800	. 1044			.0720		.0461 .0299 .0421										
.850 .900				.0066		.0449 .0360	.0213		0069				·	•		
MACH (4)	= 4.6	300 A	_PHA (4)	= 5	5.000 PI	INF =	. 16565	Q(PSI) = 2.	4532	RN/L	=	3.0000	CPSTG	= 1.	8033
SECTION (1) ORB. 1	OWER WI	NG		DEPENDEN	NT VARIA	BLE CP/CF	s					٠.	•		
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980			,			
X/CW .000 .001 .002 .003 .004 .005		.0016	0032	-0196	.1925	.2981 .0896 .0520 .3325 .1448 .0686	.3664	.3818 .1358 .1023 .3510 .1827 .1116		0131					ž	· .
.045 .100 .153 .177 .200	.0042			.0211	.oziz	.0518		.1061	.0958	,						

UPWT 1059 (1H4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAB).

MACH . 4:	+.600	ALPHA (4) = 5	.000					
SECTION	1)ORB. LOWER	WING		DEPENDEN	NT VARIAE	BLE CP/CF	s		
SANBM	.2500 .30	11 .3480	.4000	.5000	.6000	.7500	.6500	.9500	.9980
X/CW .302 .428 .444	0040		.0126		.0333	.0612			
.487 .559 .600 .700	0040		.0964	.0633	.0557 .0763				
.736 .800 .850 .900	.0968		.0004		.0837 .0622 .0395	0334		.0101	

	DATE 20 APR 76	TABULATED SOURCE	E DATA - IH4				•	•	PAGE	67
		UPW	T 1059 (1H4) (01-T18-SBN16 (ORB. VERT.	TAIL		(RQ3VAB)	(15 APR	R 76)
	REFERÊNCE DA	TA .						PARAMETRIC DA	TA	
	SREF = 2690.0000 SQ.FT. LREF = 1290.3000 INCHES BREF = 1290.3000 INCHES SCALE = .0100	YMRP = .1	DOOO INCHES DOOD INCHES DOOO INCHES				RN/L =	3.000 BE	TA =	.000
	MACH (1) = 2.360 A	LPHA ([) =	.000 PINF	= 1.1969	Q(P51) =	4.6665	RN/L =	3.0000	CPSTG =	1.7063
	SECTION (1) ORB. VERT. TA	IL	DEPENDENT VAI	RIABLE CP/CPS					• .	
	Z/BV .2990 .5320	.7650 .9050		• •	• •				•	
	X/CV .000 .3966 .3882 .300 .1268 .1203 .500 .0933 .700 ~.0459 .900 ~.0646 ~.0570	.2930 .3798 .0930 0400								•
	MACH (1) = 2.360 A	LPHA (2) = 5	.000 PINF	= 1.1969	Q(PS[) =	4.6665	RN/L	= 3.0000	CPSTG =	1.7063
	SECTION (1) ORB. VERT. TA	IL.	DEPENDENT VAI	RIABLE CP/CPS					•	
	Z/BV .2990 .5320	.7650 .9050								
	X/CV .000 .3272 .3133 .300 .0941 .0885 .500 .0638 .7003581 .90007550687	.2181 .2925 .0698					-		٠.	
:	MACH (2) = 2.950 A	<u>CPHA (1) = </u>	.000 PINE	= .66345	Q(PSI) =	4.0415	RN/L	3.0200	CPSTG =	1.7529
	SECTION (1) ORB. VERT. TA	IL.	DEPENDENT VA	RIABLE CP/CPS		•				٠.
	Z/8V .2990 .5320	.7650 .9050	•			•				
	X/CV .000 .4105 .3900 .300 .1350 .0826 .500 .1043 .70003210206				• 4.2	•				
										and the second s

			UPW	T 1059 (IH4)	01-T15-S8N16	ORB. VERT.	TAIL		(RQ3VAB)			
MACH (2)	= 2.950	ALPHA (2)	= 5	.000 PINF	= .68345	Q(PSI) =	4.0415	RN/L :	= 3.0200	CPSTG	= 1.	7529
SECTION (110RB. VERT.	TAIL		DEPENDENT V	ARIABLE CP/CPS							
Z/BV	.2990 .53	320 .7650	.9050					•				
X/CV .000 .300 .500 .700	.0979 .01	596 ?38	.3047			·	•					
MACH (3)		•	= -10.	.oro PINF	= .38922	Q(PSI) =	3.1550	RN/L :	= 3.0000	CPSTG	= 1.	7839
SECTION (1)ORB. VERT.	. TAIL		DEPENDENT V	ARIABLE CP/CP5							
Z/BV	.2990 .53	320 .7650	.9050	4	•		•		•			
X/CV .000 .300 .500 .700	.4218 .61 .113 .11 .15 .01 .0169 .08	123 .0867 139 107	.6671					÷	•			
MACH (3)	= 3.700	ALPHA (2)	≂ '~5.	.000 PINF	≈ .32922	Q(PSI) =	3.1550	RN/L :	= 3.0000	CPSTG	= 1.	7839
SECTION (1) ORB. VERT.	TAIL		DEPENDENT V	ARIABLE CP/CPS		•					
Z/BV	.2990 .53	320 .7650	.9050			•						
X/CV .000 .300 .500 .700	.4939 .41 .1256 .07 .11 .03	732 .0537 103 320	.5054			•	en i					.*
MACH (3)	= 3.700	ALPHA (3)	= .	.000 PINF	= .32922	Q(PSI) =	3.1550	RN/L :	3.0000	CPSTG	= 1.	7839
					ARIABLE OP/CPS					·		.•
Z/BV	.2990 .53	320 .7650	.9050			•			•			
X/CV .000 .300 .500 .700	.4177 .34 .0862 .05 .06 .01	566 101	.3649	. •		· · · · · · · · · · · · · · · · · · ·						·

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DATE 20 APR 78
                      TABULATED SOURCE DATA - 1H4
                                                                                                           PAGE
                                                                                             (RQ3VAB)
                                   UPWT 1059 (IH4) 01-T15-MBN16 ORB. VERT. TAIL
                                                                                                      CPSTG = 1.7839
              3.700
                      ALPHA ( 4) = 5.000 PINF = .32922
MACH =
                                                               Q(PSI) = 3.1550
                                                                                  RN/L = 3.0000
SECTION ( 1) ORB. VERT. TAIL
                                     DEPENDENT VARIABLE (P/CPS
           .2990
                  .5320
Z/BV
                         .7650
                                 .9050
X/CV
   .000
                  .3120
                         .2343
                                 .2841
           .3320
           .0500
    .300
                 .0342
                         .0310
    .500
                 .0391
    .700
                 -.0081
         -.0265 -.0140 -.0199
    .900
MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16565
                                                                                                      CPSTG = 1.8033
                                                               Q(PSI) = 2.4532
                                                                                  RN/L = 3.0000
 SECTION ( 1) ORB. VERT. TAIL
                                     DEPENDENT VARIABLE (P/CPS
Z/8V
           ,2990
                  .5320
                        .7650
                                .9050
 X/CV
   .000
           .4103
                 .6439
                         .5563
                                 .7397
                  .0869
    .300
           .1311
    .500
                  .0978
    .700
                  .0321
   .900
           .0204
                  . 0245
                         .0066
                                                                                                     CPSTG = 1.8033
MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565
                                                               Q(PSI) = 2.4532
                                                                                   RN/L = 3.0000
SECTION ( 1) ORB. VERT. TAIL
                                     DEPENDENT VARIABLE CP/CPS
Z/BV
                  .5320
                         .7650
                                .9050
 X/CV
 . .000
           . 3963
                  .3623
                         .3747
                                 .5212
   .300
           .0732
                  .0593
                         .0483
    .500
                  .0690
    .700
                  .0272
           -0055
                        .0012
   .900
                  .0200
MACH (4) = 4.600 ALPHA (3) =
                                   .000 PINF = .16535
                                                               Q(P51) = 2.4532
                                                                                   RN/L
                                                                                         = 3.0000
SECTION ( 1) ORB. VERT. TAIL
                                     DEPENDENT VARIABLE CP/CPS
Z/BV
         . 2990
                  .5320
                         7550
                                 .9050
X/CV
    .000
           .3726
                  .3498
                         .2360
                                 .3491
           .0545
                  1550.
    .300
                         .0259
    .500
                  .0323
    .700
                 -.0019
          -.0058 -.0051 -.0100
    .900
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TABULATED SOURCE DATA - IH4

PAGE 70

UPWT 1059 (IH4) 01-T15-SIN16 ORB. VERT. TAIL

(RQ3VAB)

MACH (4) = 4.600ALPHA (4) = 5.000 PINF = .16535 Q(PSI) = 2.4532RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB, VERT, TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV .000

.2657 .0205 .0200 .1905 .3024 .2654

.300 .0358 .0135

.500 .700

-.0106 -.0157 -.0137 -.0161 .900

TABULATED SOURCE DATA - IH4

PAGE

71

(RQ3TAB) (15 APR 76) UPWT 1059 (IH4) 01-T15-S8 116 EXTERNAL TANK REFERENCE DATA PARAMETRIC DATA SREF = 2690.0000 SQ.FT. XMRP .0000 INCHES RN/L 3.000 BETA .000 LREF = 1290,3000 INCHÉS YMRP .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 1.7063 MACH (1) = 2.360 ALPHA (1) = .000 PINE = 1.1969 Q(PSI) = 4.6665RN/L = 3.0000 CPSTG SECTION (I)EXTERNAL TANK DEPENDENT VARIABLE CP'CPS .3750 .4000 X/LT .0100 .0400 .0800 .1500 t 005. .2500 .2750 .3000 .3250 . 3350 .3500 THETA: .000 .3917 .0517 .2313 .0531 45.000 .0125 67.500 -.0599 -.0920 ~.0246 -.0996 90.000 -.0206 -.0208 -.0166 . 2205 .6948 -.0652 -.0797 112.500 -.0160 -.0177.2933 -.0286 135.000 .0294 .0395 .0231 -.0011 157.500 .1119 .1138 167.000 .9867 .6727 180,000 .7784 .4028 .2485 .0634 -.0154 -.0296 ~.0254 .0814 .1018 .1100 197,000 .2538 .0747 -.0245 .0892 210.000 .0703 .0822 220.000 232.0 232.0 XVLT THETA .000 50.500 225.000 .1056 .0008 .4250 .4500 .4750 .5000 .5250 .5500 .7500 .8000 .8500 .8750 .9000 .5750 .6000 .6500 .7000 -.0060 -.0131 -.0110 .055B .0004 2000 5000 5000 5000 5000 6000 6000 6000 .1077 -.0605 .0076 -.0049 -.0056 -.0056 -.0080 -.0941 -.0299 .0114 -.0284 -.0266 -.0373-.0277 -.0155 .1011 -.0322 .1771 -.0775 .0006 -.0080 .0573 .0468 .0515 .0308 .0144 .0447 .1175 . 1756 .1612 .0451 .0330 -.0258 -.0102 .0147 .0031 -.0064 -.0005 . 1332 .1420 . 1595 -.0048 .0370 .0049 ~.0115 -.0110 -.0160 .0236 .0944 .2095 -.0197 .1396 166.000 .0273 -.0244 .3474 180.000 .1389 .2342 .1611 .0859 .0018 . 0226 .0391 .0214 -.0033 -.0079 -.0300 -.0366 .0243 197.000 .0335 -.0328 .2550 210.000 -.0004 -.0091 220.000 .0727 .0128 232.000 .0211 .0012 X/LT .9250 .9750 . 9350 .9370

THETA 123.000

UPWT 1059 (IH4) 01-T:5-S8N16 EXTERNAL TANK

(RQ3TAB)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750 THETA 151.000 .2798 180.000 .3147 -.0903

210.000 .3794 MACH (1) = 2.360 ALPHA (2) = 5.000 PINF

CPSTG = 1.7063= 1.1969 Q(PSI) = 4.6665RN/L = 3.0000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .3250 .3350 .3500 .3750 .4000 .0400 .0800 .1500 .2000 .2500 .2750 .3000 THETA .000 .4814. .3042 .1008 .0579 45.000 .0818 67.500 .0029 -.0415 .0010 90.000 -.0232 -.0201 -.0221 .6894 -.0670 ~.0972 .2289 112.500 .2082 -.0832 -.1171-.0285 -.0339 135.000 -.0056 -.0070 .0150 -.0254 157.500 .0774 167.000 .0741 180.000 .9882 .6935 .1796 .0235 .0634 .0927 .6577 .3141 -.0403 .0620 -.0423 -.0520 197,000 .1903 -.0430 .0347 210.000 .0961 .0334 220.000 -.0049 225.000 .0117 232.000 -.0418 X/LT .5000 .8750 .4250 .4500 .4750 .5250 .5500 .5750 .6000 .6500 .7000 ,7500 .8000 .8500 .9000 THETA .000 .0051 .0092 45.000 .0614 .0013 .0032 67.500 -.0217 .0085 .0956 ,0335 .0245 .0160 .0037 90.000 -.0895 .0596 .0119 .1373 -,0642 .0433 .0030 -.0065 .1055 112.500 -.1003 -.0587 .0301 .0140 -.0048 .1158 .1803 .0211 .0037 -.0020 123.000 .0944 .1721\ .2129 .0100 135.000 .0005 -.0127 -.0400 .0054 .0046 -.0033 -.0017 .1597 .2097 157.500 .1053 .1124 -.0190 -.0001 -.0167 -.0311 -.0232 -.0159 .0125 .0578 .1361 .2617 161.000 .1043 166.000 .0058 -.0275 .2735 180.000 .3329 . 1272 .0280 -.0228 .0098 .0084 -.0101 -.0195 -.0300 -.0359 .0193 .0672 .1824 197.000 .0065 --.0349 .2735 210.000 -.0183 .0103 220.000 .0549 .0098 232.000 .0119 .0086

(ROSTAB) UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK ALPHA (2) = MACH (1) = 2.360 SECTION (I)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA .2250 123.000 151.000 .3124 180.000 .3306 -.0877 210.000 .4202 CPSTG = 1.7529**= 3.0200** MACH (2) = ALPHA (1) = .000 .66345 Q(PSI) = 4.0415RN/L 2.950 DEPENDENT VARIABLE CP/CPS SECTION (I)EXTERNAL TANK .4000 .3350 .3500 .2750 .3000 .3250 .0100 .0800 .1500 .2500 X/LT .0000 .0050 .0400 .2000 THETA .0249 .000 .3754 .2223 .0565 .0315 45,000 -.0444 -.0049 67.500 -.006B -.0450 -.0007 -.0170 -.0074 .2035 .6108 90.000 .0039 -.0422 112.500 -.0093 -.0066 .0811 .0507 .0053 .013B .0045 135,000 .0925 157.500 .0933 167.000 .0898 -.0061 .3628 .2210 .0571 -.0057 -.0189 -.0189 180,000 .9861 .7102 .7064 .2244 -.0157 197.000 .0674 .0492 .0655 210.000 -.0058 220,000 .0709 225.000 .0523 232.000 .9000 .7500 .8000 .8500 .8750 X/LT .4250 .4500 4750 .5000 .5250 .5500 .6000 .6500 .7000 THETA -.0125 .0043 .000 .0102 45.000 -.0219 -.0026 .0573 -.0452 .0062 .0020 -.0045 -.005B 67.500 .0061 -.0214 .0997 -.0177 -.0196 -.0200 -.0503 .0026 90.000 -.0569 .0117 .0233 .0142 .0119 . 1344 .0387 .0277 112.500 -.0503 -.0357 -.0227 .0458 .1260 -.0096 123.000 -.0041 .0170 .0046 .0963 .1069 135.000 .0113 .0463 .0083 .0045 .0128 .1383 .1031 .1174 .0281 .0715 .0073 1020. .0009 -.0100 -.0175 .0215 .0627 157,500 161.000 .i058 .0015 .0752 166.000 .1490 .0336 .0358 .0223 -.0002 -.0149 .0078 .0946 . 1953 .0701 .0369 .0117 .0603 . 1916 180.000 .1674 -.0018 197.000 .0755 -.0036 210,000 .0290 .0283 220.000 .0739 .0076

-.0209

232.000

.0345

(RQ3TAB)

UPWT 1059 (1HH) 01-T15-S8N16 EXTERNAL TANK 2.950 ALPHA (1) = .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123. .1809 151.000 .1536 180.000 ... 1807 -. 0548 210.000 .3289 CPSTG 1.7529 PINF .66345 Q(PS1) = 4.04153.0200 MACH (2) = 2.950ALPHA (2) = 5.300 DEPENDENT VARIABLE CP/CPS SECTION (1) EXTERNAL TANK .3750 .4000 .3250 .3350 .3500 .2750 .3000 X/LT .0000 .0050 .0100 .0400 .0800 . 1500 .2000 .2500 THETA .0550 .2898 .1012 .000 .4536 .0203 45.000 .0366 -.0084 67.500 .0090 -.0450 .2103 -.0148 90.000 -.(097 -.0093 -.0095 .5741 -.0671 112.500 -.0169 -.0233 .1284 -.0375 .0071 .0126 -.0093 135.000 -.0046 .0479 157.500 .0463 167.000 .0310 . 0490 .0274 180.000 .2710 .1622 .0288 -.0238 -.0153197.000 .170B .0375 -.0263 .0411 210.000 .0378 -.0230 220.000 .0438 225.000 .0137 232.000 .8000 .8500 .8750 .9000 .7500 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 THETA .0188 .0034 .000 .0098 .0139 45.000 .0056 .0025 .0205 .0224 .0173 .0123 .0786 -,0131 67.500 .1405 .0329 .0247 .0142 .0100 .0279 -.0509 - 0497 -.0135 90.000 .0495 .1346 .0104 .0065 112.500 -.0671 -.0537 -.0318 .0156 .0205 .0153 .0092 ..0939 .1418 123.000 .0069 .1339 .0021 .0088 .0047 135.000 -.0144 .0092 -.0129 -.0151 . 1541 .0462 .0854 .0795 157.500 .0673 .0044 .0375 -.0041 -.0002 -.0166 -.0217-.0014 161.000 .0687 .0334 -.0150 165,000 .1659 .0073 -.0843 -.0058 .0426 .0919 .1560 .0159 -.0076 .0296 .0203 -.0155 180.000 .2238 .0530 .1919 -.0156197.000 .0343 .0049 .0015 210.000

.0082

.0198

UPWT 1059 (IH4) 01-T15-38N16 EXTERNAL TANK

(RQ3TAB)

MACH (2) =2.950 ALPHA (2) =SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE 3P/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1819 151.000 .1745 180.000 .1879 210.000 .3372 3.0000 MACH (3) =3.700 ALPHA(I) = -10.000 PINF = .32922Q(PSI) = 3.1550SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 X/LT .0000 .0050 .0100 .2500 .3000 .3250 .3350 .3500 .3750 .0400 .0800 .1500 .enoo THETA -.0071 .000 .1944 .0896 -.0039 -.0434 45.000 67.500 -.0422 -.0476 -.0257 90.000 -.0164 -.0076 -.0001 .1816 .4385 .0079 .0604 112.500 .0169 .0252 .0239 .1147 .0428 .0436 ..0329 .0145 135.000 .1193 157.500 . 1363 167.000 .0352 .0348 .0423 .1691 .7386 180.000 .5346 .3543 .1474 .0824 .0372 197.000 .0352 .3450 .1612 . 1246 210.000 .1477 .1029 220.000 .1029 225.000 232.000 .1280 :9000 X/LT .7500 .8000 .8500 .8750 .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 THETA -.0217 .000 -.0192 -.0105 -.0217 45.000 -.0431 67.500 -.0470 -.0357 -.0277 -.0271 -.0087 -.0380 →.0407 .0072 .0626 90.008 -.0129 -.0095 .0153 .0013 -.0005.0164 .0416 .1408 112.500 .0334 .0497 .0697 .0897 .0855 .0631 .0558 .0423 .0431 .1624 123.000 .0244 .1006 .0454 .0458 . 1434 135.000 .0990 .1091 .0572 .0472 .0642 .0562 .1163 .0503 .0428 .1809 .0632 .0699 .0449 .0448 .0913 157.500 . 1858 .0646 .0495 . 1356 161.000 .0239 166.000 .0502 .2029 .0615 .0711 .OF29 .0393 .0465 .0343 .1396 180.000 .2453 .0871 .045B .0517 .0439 197.000 .1999 .0379 .0488 .0513 210.000 .0704 .0632 220.000 .9026 .0411 .0530 232.000

220.000

232.000

.8397

(RQ3TAB) UPWT 1059 (1H4) 01-T15-SENIG EXTERNAL TANK MACH (3) = 3.700 ALPHA (1) = -10.000(C) SECTION ([]EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA .1987 123,000 151.000 .3214 180.000 .2753 -.0204 210.000 .3247 CPSTG = 1.7839 Q(PSI) = 3.1550RN/L 3.0000 MACH (3) =3.700 ALPHA (2) = -5.000 PINF = .32932 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 .3350 .3500 X/LT .0000 .0050 .0100 .0400 .0800 .1500 ot 0S. ,2500 .2750 .3000 .3250 THETA .0018 .000 .2645 .1404 .0204 45.000 -.0161 -.0150 -.0230 -.0385 67.500 -.0184 .0126 -.0072 -.0011 .4623 90.000 .1410 .0620 .0174 .0067 .0123 .0110 112.500 -.0029 -.0128 135.000 .0198 .0150 .0782 157.500 .0799 167,000 180.000 .2809 .0170 .0303 .0577 .0829 .7717 .7295 .4427 .0968 .0283 .0109 197.000 .2767 .1090 .0105 .0775 210.000 .1018 .0532 220.000 .0703 225.000 . 1099 232.000 .8750 .9000 X/LT .6000 .6500 .7000 .7500 .0000 .8500 .4250 .4500 .4750 .5000 .5250 .5500 .5750 THE 'A .000 -.0074 -.0170 .0026 45.000 -.0316 ~.0210 -.0199 -.0153 .0037 67.500 -.0315 -.0254 -.0446 -.0323 .0220 90.000 .0075 .0015 -.0001 -.0072 -.0257 -.0299 -.0240 .0048 .0526 112.500 .0468 .0546 .0385 .0324 .0286 .-.0037 .0013 .0160 .0265 .0073 .0259 .0972 123,000 .0224 .0947 .0948 .0150 .0203 .0239 .0296 .0679 135,000 .0433 .0478 . 1242 157.500 .0973 .0519 .0286 .0349 .0274 .0198 .0098 .0135 .0565 .1212 .0754 151.000 .1017 .0323 166.000 . 0536 .1422 . 1984 .0430 .0378 .0912 180.000 .2322 .0631 .0245 .0430 .0354 .0426 .0279 .0178 .0050 .1470 197.000 .0498 .0311

.0391

.0210

.0371

.0194

.1486

X/LT

PAGE TABULATED SOURCE DATA - 1H4 (RQ3TAB) UPWT 1059 (IH4) 01-T15-SEN16 EXTERNAL TANK ALPHA (2) = -5.000 3.700 DEPENDENT VARIABLE CF/CPS SECTION (1) EXTERNAL TANK .9250 .9350 .9750 .9370

CPSTG = 1.7839

THETA 123.000 151.000 180.000 210.000 .1699 . 1644 . 2882 -.0353 = 3.0000 MACH (3) =3.700 ALPHA (3) =RN/L SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CPS

SECTION L	DEXIER	NAL TANK			DEPENDE	NI VARIA	BLE CF/C	ro ·							
:X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA ,000 45,000 67,500 90,000 112,500 135,000				.3415	.2008	.0512	0008	0074	0004 0001	.0017 .1182 .0036	. 3466 . 0044 . 0036		.0095 .0132 .0191 .0098	0105	.0150 .0005 0218 0125 0167 0020 .0407
167.000 180.000	.9785	.6607	.7141	.3451	.2102	.0571	.003+	.0019		.0019			.0170	.0331	.0492
197.000 210.000 220.000					.2095	.0646 .0623				.0022					.0462 .0228
225,000 232,000												.0458			.0986
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5751	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112,500 123.000		0307 0274		0317 0341 0258		0218		0044 0159 0102 .0004	0024 .0131	0029 0077 .0244	0083 0096 .0190	0101 0045 0059 0105 .0163	~.0053 .0146 .0033	.0545	.0201 .0469 .0777 .1039 .0989
135.000 157.500	.0503	.0202 .0791	.0259	.0561 .0516	•	.0197 .0108		.0021 .0174	.0036	0010 0001	.0060 0095	.0043 .0018	.0581 .0288		.0912 .0979
161.000 166.000 180.000	.0736	.1778	.0578	.0571	.0112	.0269	. 0252	.0174	.0234	.0126	0015	0130	.0597		.1206
197.000 210.000 220.000	, ,			.0702 .7785				.0169		.0127		0018			.1183
232.000								0071				.0051			

210.000

220.000

232.000

.0241

.7191

.0999

(RQ3TAB) UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK MACH (3) =ALPHA (3) =3.700 .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123,000 .1194 151.000 .1281 180.000 .1767 -.0357 210.000 .2111 CPSTG = 1.7839 MACH (3) = = 3.0000 3.700 ALPHA (4) = 5.000 PINF .32922 Q(PSI) = 3.1550RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 .3250 .3500 .3750 X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3350 THETA .0423 .000 .4286 .2716 .0969 45.000 -.0146 .0472 .0080 67.500 .0128 -.0102 90.000 . 1238 .4158 1550. -.0051 -.0003 .0003 -.0110 112.500 -.0051 .0192 -.0347 -.0048 -.0014 -.0008 135.000 -.0027 -.0046 .0323 157.500 .0255 167.000 -.0060 5000.-.0077 .0327 180.000 .9786 .2507 . 1498 .0272 -.0109 -.0030 .6122 .5531 197.000 .1536 .0335 -.0043 .0317 210.000 .0337 -.0036220.000 225.000 1550. .0515 232.000 X/LT .4250 .4500 .5000 .5250 .5500 .5750 .6500 .7000 .7500 .8000 .8500 .0750 ,9000 .4750 .6000 THETA .000 .0166 -.0068 .0161 45.000 .0090 .0059 67.500 -.0075 .0057 .0088 .0125 .0296 -.0003 .0024 90.000 -.0254 -.0307 -.0219 -.0163 .0045 .0164 .0117 .0916 .0173 .1018 112.500 -.0353-.0345 -.0281-.0094 .0007 .0078 .0131 .0143 .0146 .0949 .0064 .0651 123.000 .0871 135.000 -.0150 ÷.0171 -.0155 -.0070 -.0067 -.0026 -.0025 -.0023 .0685 157.500 .0272 .0306 -.0188 .0078 .0318 .0972 .0169 .0221 .0118 8500. -.0075 -.0137 161.000 .0224 ~.0039 .0149 166.000 .1029 180.000 .0066 .0038 -.0036 -.0178 -.0016 .0606 .1398 .1102 .0180 .0166 .0217 .0227 .0134

.0051

-.0246

-.0054

.0012

-.0083

-.0009

PAGE 79

UPWT 1059 (1H4) 01-T15-S9N16 EXTERNAL TANK

(RQ3TAB)

MACH (3) =3.700 ALPHA (4) = 5.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1167 151.000 .1176 180.000 .1363 -.0376 210.000 . 1975 = 1.8033 MACH (4) = 4.600 ALPHA (1) = -10.000PINE . 1 5565 Q(PSI) = 2.4532RN/L 3.0000 CPSTG SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3500 .3750 .4000 X/LT .0000 .0050 .0100 .0400 .0800 .2500 .2750 .3000 .3250 .3350 . 1500 . 2000 THETA .000 -.0083 .1696 .0769 .0002 45.000 -,0277 67.500 -.0085 -.0194 -.0249 .0234 .0003 90.000 .1217 .3776 . 3018 -.0014 .0051 .0578 112.500 .0187 .0268 .0282 .1030 .0261 .0238 135.000 .0411 .0360 157.500 .0986 .0999 167.000 .0347 .0557 .1274 180.000 .7779 .7007 .3294 . 1585 .0365 .0317 .8814 .4897 .1349 197.000 .3196 . 1457 .0325 .0938 210.000 .1341 220.000 .0693 .0754 225.000 .1340 232,000 X/LT .7000 .8000 .8500 .8750 .9000 .4250 .4750 .5250 .13750 .6500 .7500 .4500 .5000 .5500 .6000 THETA -.0110 .000 -.0083 - 0236 - 0193 45.000 -.011R -.0282 -.0093 67.500 -.0252 -.0172 -.0242 -.0242 -.0207 .0327 90.000 -.0014. ~.0007 .0081 .0358 .0296 .0209 .0107 .0090 112.500 .0333° .0374 .0629 .0841 .0668 .0519 .0470 .0408 .0907 .0611 .0226 .0551 .1395 123 000 .0952 .1240 135 * .0683 .0479 .0421 .0513 .0587 .0467 .0894 .1162 157.5 .1082 .1314 .0505 .0478 .0696 .0309 .0392 .0342 .0407 .0904 .1520 .0522 161.000 .0999 .0563 .0382 166.000 .0407 .1849 .0454 .0336 . 1126 180.000 .2832 .2768 .0732 .0741 .0579 .0588 .0540 .0343 .0283 . 1793 197.000 .0483 .0477 210.000 .0641 -0415 220.000 .5723 .0569 .0374

.0375

232.000

UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK (RQ3TAB) MACH (4) = ALPHA ('1) = -10.000 4:600 SECTION ([]EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1735 151,00D .2568 180.000 .2145 -.0105 210.000 .3080 CPSTG = 1.8033= 3.0000 MACH (4) = 4.600 ALPHA (2) = ~5.000 .16565 Q(PSI) = 2.4532RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE SP/CPS .4000 .2750 :3350 .3750 X/LT .0000 .0050 .0100 .0400 .0800 . 1500 .2000 .2500 .3000 .3250 .3500 THETA .0071 .000 .2533 .1360 .0236 45.000 -.0115-.0200 67.500 -.0052 -.0073 .0003 .4395 .0287 90.000 .0003 .0051 .0873 -.0)26 112.500 .0146 .0551 .0225 .0119 .0167 .0044 .0057 135.000 .0208 .0232 .0691 157.500 .0604 167.000 .0290 .0486 .0643 .0241 180.000 .7476 .2655 .0901 .0141 .7264 . 0.290 197.000 .2587 .0220 .0990 .0744 210,000 .0922 .0569 220.000 .0517 225.000 . 1325 232.000 .9000 X/LT .4250 .4500 .4750 .5000 .5750 .7000 .7500 .8000 .8500 .8750 .5250 .6000 .6500 .5500 THETA -.0052 .000 -.0050 -.002045,000 -.0213 -.020567,500 -.0248 -.0207 -.0213 -.0168 -.0159 .0091 -.0149 .0207 -.0028 .0131 .0046 90.000 -.0104 -.0145 -.0135.0186 .0084 .0396 .0399 .0337 .0302 112.500 .0044 .0064 .0085 .0273 .0275 .0460 .0780 .0146 .0311 123.000 .0729 .0201 .0288 .0698 135.000 .0575 .0839 .0523 .0229 .0221 .0294 .1018 .0142 .0506 157.500 .0805 .1032 .0456 .0560 .0338 .0353 .0225 .0253 .0161 161,000 .0892 166.000 .0525 .0415 .1150 .0246 .0148 .0720 .0639 .0228 .0319 180,000 .1630 .2352 .0504 .0316 .0263 .0311 .0270 ,1199 197.000 .0302 .0635 210.000 .0207 .0306 220.000 .5333 .0376

DATE 20 APR 76 PAGE 81 TABULATED SOURCE DATA - IH4 UPWT 1059 (IH4) 01-T15-58N16 EXTERNAL TANK (RQ3TAB) MACH (4) =ALPHA (2) = -5.0004.600 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9370 .9250 .9350 .9750 THETA 123.000 . 1239 151.000 .1323 180.000 .1297 -.0215 210,000 .2854 $MACH^{+}(4) =$ 4.600 ALPHA(3) =.16565 Q(PSI) = 2.4532= 3.0000 CPSTG 1.8033 RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE (P/CPS X/LT .4000 .0000 .0050 0010. .0400 .0800 .2750 .3000 . 3250 .3350 .3500 .3750 .1500 .2000 .2500 THETA .3386 .000 . 1999 .0544 .0199 45.000 -.0070 67.500 .0076 -.0391 .0181 90.000 .0007 .4271 .0051 .0038 .0072 .0311 .0607 112.500 -.0057 .0082 .0038 .0209 .0099 135.000 .0083 -.0023 .0021 .0093 157.500 .0616 167.000 . 0355 180.000 .9793 .6557 .6834 .3288 8505. .0552 .0092 .0132 .0106 .0136 .0215 .0359 197.000 .1990 .0637 .0101 210.000 .0372 .0613 220.000 .0224 225.000 .0346 232.000 .1166 X/LT .4250 .4500 .4750 .8750 .9000 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 THETA -.0001 .000 -.0005 45.000 .0079 -.0091 -.0047 67,500 -.0190 -.0057 -.0085 -.0069 -.0064 .0239 -.0039 90.000 -.0149 -.0122 -.0126 .0004 .0007 .0007 .0282 +.0057 .0004 112.500 -.0078 .0190 .0574 -.0132 -.0095 -.0019 -.0029 .0046 .0131 .0178 123.000 .0210 .0690 .0046 .0038 .0071 135.000 .0205 .0304 .0209 .0112 .0067 .0017 .0308 .0571 157.500 .0289 .0372 .0389 .0298 .0027 .0781 .0285 .0176 .0080 .0083 -.0017 .0110 161.000 .0311 166.000 .0424 .0178 180.000 .1472 .1389 .0485 .0197 .0309 .0963 .0355 .0123 .02+5 .0133 .0172 .0137 .0080 -.0012 197.000 .0534 .0926 .0153 210.000 .0033 .0169 220.000 .4936 .0147

-.0065

UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK (RQ3TAB) 4.600 ALPHA (3) =SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CITICPS X/LT .9250 .9350 -9370 .9750 THETA 123.000 .0994 151.000 .1200 180.000 .1343 -.0230 210.000 .1872 CPSTG = 1.80333.0000 MACH (4) =4.600 ALITHA (4) = 5.000 . 16565 Q(PSI) = 2.4532RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CF/CPS .3000 .3350 .3500 .3750 .4000 .2750 .3250 X/LT .0000 .0050 .0100 .0400 .0800 . 1500 .2000 .2500 THETA .000 .0366 .2747 .4319 .0935 -.0054 45,000 .0549 .0178 67.500 .0198 .0059 .0352 90.000 .0019 .0024 .0065 .0774 .3776 -.0163 -.0006 .0059 112.500 .0031 .0028 135.000 .0045 .003B .0024 .0035 157.500 .0603 .0171 167.000 .0032 .0045 .0285 .9843 180.000 .2346 .1440 .0285 .0007 .0049 .0036 .6140 .5238 .0359 .0036 197.000 .1455 .0132 210.000 .0345 .0032 220.000 .0232 225.000 .0651 232.000 .8000 .8500 .8750 .9000 X/LT .4250 .5500 .6000 .6500 .7000 .7500 .4500 .4750 .5000 .5250 .5750 THETA .0171 .0094 .000 .0191 .0050 45.000 .0096 .0081 .0064 .0313 67.500 .0024 .0078 .0054 .0085 .0558 90.000 -.0098 -.0091 ~.0074 -.0028 -.0023 .0018 .0081 -.0122 .0157 .0664 .0015 .0057 112.500 -.0150 -.0163 -.0163 -.0062 -.0077 -.0036 123.003 .0140 .0221 .0593 -.0048 .0022 -.0027 .0616 135.000 -.0180 .0019 .0357 -.0001 -.0183 -.0100 .0092 .0673 -.0002 -.0093 -.0054 -.0114 157.500 .0097 .0080 .0136 .0101 .0180 .0081 .0014 161.000 166.000 .0180 -.0005 .0784 -.0108 .0326 180.000 .1269 .0730 .0324 .0084 .0224 .0263 .0250 .0143 .0062 -.0014 -.0099 -.0037 .0814 197.000 .0241 210.000 .0046 -.0082 .0044 .4566 220.000

-.0170

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-.0057

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01-T15-SB-116 EXTERNAL TANK

PAGE

ALPHA (4) =

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP'CPS

X/LT .9250 .9350 .9370 .9750

THETA: 123.000 151.000 180.000 210.000

.0896

.0926

UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT, BSTR.

(RO3SAB) (15 APR 76)

	REFERENCE DAT	ΓΑ					F	PARAMETRIC	DATA		
SREF =	590.0000 SQ.FT.	XMRP	=		INCHES	RN/L	=	3.000	BETA	-	.000
LREF = BREF =	290.3000 INCHES 290.3000 INCHES	YMRP ZMRP	=	.0000	INCHES						

LREF =	1290,3000 1290,3000 0100	INCHES	YMRP ZMRP	· .	0000 INC	HES				rui	47L =	3.000	BETA	_	.000
MACH [[) = 2.:	360 A	LPHA (1) =	.000 P	INF =	1.1969	Q(PS	SI) = 4.	6665	RN/L	= 3.000	O CP	STG ≖	1.7063
SECTION	(DSOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/	:PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	1.0067		.1187	. 1212 . 1257		. 1207 . 1275		4		0217	0356	0277	0201 .0585 .0565	.0039	0009 0075
260.000 270.000 315.000		.2264	.1342	.0812	.1379	.7016	.8182	.6452	0887	0650	1005	0250 0568	0301	0341	0371
X/LSRB	.7000	.7800	.0000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000 215.000	0033 0137	.0639 .2932	0363 .1740	0289	0293	.2730	0478	.1065 .1095 0078	-,1073	0700	.0419 1280	.0952 0200			
225.000 240.000		.4958	0590	0872				0230 0290			0816	0497			
247.500 270.000 315.000	.0676 .0411 0144	.2842	0686	0618			•	0262				. 1257			
MACH (1) = 2.3	360 A	LPHA (2	!) = 5	5.000 P	INF =	1.1969	Q(PS	S1) = 4.	6665	RN/L	= 3.000	IO ÇF	STG =	1.7063
SECTION	(1)50LID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	:PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	. 1 1,00	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.500	.9933		.1074	.1125 .0658		.1129 .0646				0925	0610	0373	0346 .0422 .0245	.0111	~.0075 ~.0053
260.000 270.000 315.000		.2273	.1334	.0783	.1301	.6738	.8167	.5553	0882	~.0960	0965	0692 0199	.0400	.0148	0013

.247.500

270.000

315.000

-.0021

-.0215

-.0117

.3088

-.0408

-.0592

DATE 20 APR 76 PAGE TABULATED SOURCE DATA - 1H4 85 UPWT 1059 (1H4) 01-T15-S8N15 SOLID RCKT. BSTR. (RQ3SAB) 2.360 MACH [1] = ALPHA (2) = SECTION (1)SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSR8 .7000 .7800 .8000 .9000 .9900 .9100 .9200 .9250 .9300 .9400 .9500 .9600 PSI -.0052 90.000 .0083 .0981 .0979 .0438 180.000 .0895 .3118 -.0123 .0155 .1326 -.0017 .0653 210.000 .0281 . 1941 -.0158 -.0621 215.000 ~.0829 -.1203 -.1293 225.000 .1000 -.0578 .2115 -.0435 -.0851 240.000 -.0633 -.0853 -.0551 247.500 .1342 270.000 .1200 .0861 -.0750 -.0643 -.0315 .1302 315.000 .0192 2.950 λ LPHA (1) = .000 PINF .66345 Q(PSI) = 4.0415RN/L = 3.0200CPSTG = 1.7529 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS **JULSRB** .0000 .0250 .0500 .0750 .6000 .0040 .1000 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .1100 PSI 90.000 .1134 1.0921 .1099 .1123 -.0101 180.000 .1222 .1018 -.0282 .0256 225.000 .0372 .0190 .0115 247.500 -.0488 .0325 .0192 .0133 260.000 .6623 270.000 .2546 . 1549 .0941 .1031 . 1683 .9553 -.0507 -.0501 .0086 -.0234 -.0249 -.0257 -.0090 315.000 -.0465 X/LSRB .7000 .7800 .8000 .9000 .9250 .9100 .9300 .9900 .9200 .9400 .9500 .9600 PSI 90.000 .0019 .1006 -.0174 .0502 .D958 180.000 .0054 .1661 .1792 .0126 .0662 .0748 .0145 210.000 -,0077 . 1850 .0309 -.0320 215.000 -.0178 -.0613 -.0767 225.000 .2726 .0570 ~.0578 -.0178 -.0415 240.000 -.0435 ~.0395 -.0320

-.0341

225.000

240.000

.3139

.0809

-.0128

(RQ3SAB) UPWT 1059 (1H4) 01-T15-SBN16 SOLID RCKT. BSTR. 3.0200 CPSTG = 1.7529MACH (2) = 2.950 ALPHA (2) =5.000 PINF Q(PSI) = 4.0415RN/L = .6fi345 SECTION (1) SOLID ROKT, BSTR DEPENDENT VARIABLE CP/CPS .6000 X/LSR8 .0250 .1500 .2000 .3000 .4000 .5000 .0000 .0040 .0500 .0750 .1000 ...100 .1150 .1300 90.000 -.0224 1.0677 .1014 .1057 .1082 180,000 .0102 .0716 .0604 -.0443 .0098 .0046 225.000 -.0442 247.500 -.0578 .0344 .0123 260.000 .5872 .0129 -.0460 .0196 .0256 270,000 .2539 .1547 .0923 .1271 .1703 .9878 -.0242 ~.0390 -.0482 315.000 -.0102 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900 PSI .0971 .0782 .0381 90.000 .0078 -.0013 180,000 .1077 .0881 .0436 .0044 .2582 .0506 .0215 .0224 210.000 -.0203 -.0061 1732 -.0764 215,000 -.0690 225.000 .1724 .0631 -.0063 -.0399 240.000 -.0293 -.0469 -.0364 247.500 .0729 .1469 -.0454 270.000 .0575 -.0285 .0640 -.0500 315.000 .0011 MACH (3) =3.700 ALPHA(1) = -10.000PINF = .32922 Q(PS1) = 3.1550RN/L = 3.0000 CPSTG = 1.7839SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .2000 .3000 .4000 .5000 .6000 .0000 .0040 .0250 .0500 .0750 .1150 .1300 .1500 .1000 .1100 -.0364 90.000 1.1497 .0963 .0905 .0932 180.000 .2797 .2436 .0521 .1008 225.000 .0605 .1005 .0478 247.500 .0254 .0619 .0377 .1049 260.000 270.000 -.0208 -.0098 .0332 .0132 -.0048 .2845 .1734 .1052 .0847 .1829 -.0084 -.0148 .5+64 315.000 -.0431 X/LSRB 7000 .7800 .8000 .9000 .9200 .9500 .9600 .9900 .9100 .9250 .9300 .9400 PSI 90.000 -.0366 .0089 -.0359 -.0118 -.0285 180.000 .2223 .0276 .0533 .027B .2032 .1110 .0145 210.000 .0009 .0499 .2512 .0365

-.D268

.0401

-.0071

-.0415

-.0212

-.0303 -.0393

225,000

240.000

247.500

.1577

.0164

.1105

-.0297

(RQ3SAB) UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT. BSTR. 3.700 *** ALPHA (1) = -10.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .9900 .7000 .7800 .8000 .9000 .9100 .9200 .93'50 .9300 .9400 .9500 PSI · 247.500 .0304 .0393 270.000 -.0383 -.0061 .2857 -.0285 ~.0410 315.000 -.0303 1.7839 Q(PSI) = 3.15503.0000 MACH (3) = 3.700 ALPHA (2) = -5.000 PINE .32922 RN/L SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE (P/CPS .2000 .5000 .6000 X/LSRB .1100 . 1500 .3000 .4000 .0000 .0040 .0250 .0500 .0750 .1000 .1150 .1300 PS I 90.000 -.0186 1.1922 .1035 .1027 .1015 180.000 .0147 .0396 .2034 .1703 .0443 225.000 .0735 .0365 .0367 247.500 -.0089 .0427 .0503 260.000 -.0115 -.0095 -.0288 -.0055 .0046 -.0066 270.000 .1731 .2887 .1813 .0874 .427B .1082 315.000 -.0436 .9900 X/LSRB .9600 .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 PS1 -.0103 90.000 -.0236 .0164 -.0303 -.0034 180.000 .0104 . 1540 .1907 .0139 .0556 .0057 210.000 .0135 .1806 .0369 -.0050 -.0427 215.000 -.0283

.0397 270,000 -.0118 .3068 -.0245 -.0391 -.0333 315.000 -.0165CPSTG = 1.7839 PINF Q(PSI) = 3.1550≃ 3.0000 MACH (3) =3.700 ALPHA (3) = .000 .32922 RN/L SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS .3000 X/LSRB .1000 .1150 .1300 .1500 .2000 .4000 .6000 .0000 .0040 .0250 .0500 .0750 .1100

.0230

-.0310

-.0222

-.0300

-.0314

90.000 -.0073 1.2003 .1050 .1059 .1063 -.0138 180.000 .1356 .1076 -.0086 .0230 .0152 225.000 .0095 .0173 .0186 247.500 -.0284 .0087 260.000 .5057 -.0088 .0117 -.0200 -.0318 -.0081 -.0086 -.0094 .1693 270,000 .2927 .1868 .1103 .1144 .4614

(RQ3SAB)

				. UFW	ii toba i	1H41 O1-	112-2381	e zorin	RCKI. B	SIR.		IRUS	PAHI		
MACH (3)	= 3.1	700 A	LPHA (3	;) <u>=</u>	.000										
SECTION (1)SOL1D	RCKT. B	STR .		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 315.000										•		0297			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			٠
PS1				, , ,											
90.000 180.000 210.000	0073 .0042	.0807 .1441	0119 .1653	.0167	.0068	.1457		.0292 .0519 .058		0046	.0549	. 0478 . 0277			
215.000 225.000 240.000	ane t	.4323	0019	0280			0036	.0093 0227	0346	•	0456 0246 0273	0300			
247.500 270.000 315.000	.0061 .0079 .0113	.2770	0231	0328				0237			-	.0383	- :		
MACH (3)	= 3.7	700 A	LPHA (4) = 5	.000 P	INF =	.32922	QIPS	1) = 3.	1550	RN/L	= 3.000	O CP	STG =	1.7839
SECTION (1150110	RCKT. B	STR		DEPENDE	VARIA	BLE CP/C	PS							•
X/LSRB	.0000	.0040		8200											
PSI		.0404	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	,5000	.6000
90.000	1.1769	.0240	.0250	.0996	.0750	.1012	.1100	.1150	.1300	.1500		.3000	0135	,5000	.6000
180.000 225.000 247.500	1.1769	.0040			.0750		.1100		.1300	0138	.2000 0326	.3000 0313		.0030	.0147 .0194
180.000 225.000	1.1769	.2941		.0996	.1119	.1012	.4369	.1150	0091				0135 0101 0106 0159		.0147
180.000 225.000 247.500 260.000 270.000	.7000		.0980	.0996 .0807		.1012				0138	0326	0313 0284	0135 0101 0106 0159	.0030	.0147 .0194
180.000 225.000 247.500 260.000 270.000 315.000		.2941	.0980	.0996 .0807	.1119	.1012.0639	.4369	.5573 .9300 .0602 .0967	0091	0138 0079 .9500	0326	0313 0284 0059 .9900	0135 0101 0106 0159	.0030	.0147 .0194
180.000 225.000 247.500 260.000 270.000 315.000 X/LSR8 PSI 90.000	.7000 ~.0017	.2941 .7800	.0980 .1873 .8000 .0256	.0996 .0807 .1095	.1119	.1012 .0639	.4369	.5573 .9300	0091	0138	0326 0182 .9600	0313 0284 0059 .9900	0135 0101 0106 0159	.0030	.0147 .0194

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DATE 20 AF	PR 76		TABULAT	ED SOURC	E DATA -	IH4			•					PAGE	89
				UPW	T 1059 (IH4) 01-	T15-58416	SOLIĎ	RCKT. B	STR.		(R03	SAB)		
MACH (4)	ı = 4.0	500 A	LPHA (1) = -10	.000 P	inf =	. 16565	QCPS	1) = 2.	4532	RN/L	= 3.000	D CPS	STG =	1.8033
SECTION	t)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	PS			٠	٠			
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
P51 90.000 180.000 225.000 247.500 260.000	1.2413		.0932	.0854 .2755		.0887 .2368		.4501		.0691	.0462	.0254	0238 .0855 .1027 .0805	.0594	9440. S140.
270.000 315.000		.3033	.1882	.1104	.0741	. 1831	.2773		.0015	0025	.0010	0018 0253	.0294	.0254	.0083
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000	0266 ,0324	.0273 .1680	0204	.0327	.0483	.2246	.0480	.0008 .1002 .0658 .0427	0049	.0274	.0689 0196 .0022 0110	0131 .0352 0178			
247.500 270.000 315.000	.0318 :0035 0193	.2589	0104	0269				0269				.0376			•
MACH (4)	1 = 4.1	500 Å	LPHA (2) = ' -5	.000 P	INF =	. 16565	Q(PS	t) = 2.	4532	RN/L	= 3.000	O CP	STG =	1.8033
SECTION	1)50L10	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	PS .			•				
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	1.3350		.tota	.0969 .2054		.0979 .1665	•	. 74.07		.0399	.0102	0024	0131 .0050 .0232 .0185	.0472	.0401 .0360
260.000 270.000 315.000		.3195	1994	.1154	.0949	.1730	2682 .	.3187	.0020	.0024	0049	-:0159 -:0267	0115	.0111	.0023
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000	0141 .0145	.0380	0157 .1604	.0218 0092	.0231	.1715	.039′	.0057 .0550 .0458 .0246 0126	0095	.0062	.0486 0218 0052 0147	0014 .0181 0180	• •		

DENT 1050 (INL) 01-T15-SENIS SOLID BOKT BSTR

UPWT 1059 (IH4) 01-T15-SBN16 SOLID RCKT. BSTR. (RQ3SAB)

MACH (4) = 4.600 ALPHA (2) = SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .9300 .9400 .9500 .9600 .9900 .7000 .8000 .9000 .9200 .925C PSI 247.500 .0205 .0373 270.000 -,0020 .2424 -.0078 -.0230 -.0194 315.000 -.0118 1.8033 MACH (4) = 4.600 ALPHA (3) =.000 · PINF .16565 Q(PSI) = 2.4532RN/L 3.0000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .6000 .4000 .5000 X/LSRB .1300 .1500 .2000 .3000 .0000 .0250 .0500 .1000 .1100 .1150 .0040 .0750 P51 1:3707 .1044 -.0032 90.000 .1058 .1048 -.0075 180.000 .1415 .1088 -.0054 .0198 .0104 -.0112 225.000 -.002t .0033 .0107 .0198 247.500 260.000 .3217 -.0112 .0025 -.0051 -.0112 -.0108 -.0109 270.000 .1201 .1760 .2634 .0250 .3359 .2103 . 1249 -.0193315.000 .9900 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9800 PSI .0274 90.000 .0005 .0890 -.0007 .0267 .0328 .0236 .0485 180.000 .0084 .1317 .1218 .0158 .1294 .0241 .0080 210.000 .0038 -.0254 215.000 .0072 -.0198 -.0060 -.0147 225.000 .1886 .0199 -.0144 -.0165 -.0184 -.0137 240.000 247.500 .0151 .0370 270.000 -.0004 .1886 -.0118 -.0211 -.0188 -.0001 315.000 1.8033 CPSTG RN/L 3.0000 4.600 ALPHA (4) = 5.000 PINF . 16565 Q(PS1) = 2.4532SECTION (1) SOLID ROKT, BSTR DEPENDENT VARIABLE CP/CPS .6000 .2000 .3000 .4000 .5000 X/LSRB .0250 .0500 .0750 .1100 .1150 .1300 .1500 .0000 .0040 .1000 PSI -.0119 90.000 1.3406 .0979 .0966 .0982 .0599 ~.0204 -.0043 180.000 .0857 .0019 -.0091 -.0075 225.000 -.0102 -.0102 -.0022 -.0129 247.500 .3992 260.000 -.0036 .1823 .2850 .0056 .0087 -.0027 -.0126 -.0109 -.0109 270.000 . 3394 .2137 . 1206 .1159

DATE 20	APR 76		TABULAT	ED SOURC	E DATA -	IH4				•				PAGE	91
				UPI	IT 1059 (IH4) 01-	T15-58N:	6 SOLID	RCKT. B	STR.		tRQ3	SAB)		
MACH (4) = 4.	600 A	LPHA (4	:) = 5	5.000			•							
SECTION	4 (1)50LID	RCKT. E	STR		DEPENDE	NT VARIA	BLE CP/C	PS			- "				
X/LSRB	.0000	0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 315.000												.0005			
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000 215.000 240.000	.0129 0 0 0	.0793 .0355	.0135 .0158 .0273	.0235	0014	. 1475	.0137	.0424 .0857 .0540 0005 0131	0150	.0137	.0872 0236 0017 0116	.0399 .0650			
247.500 270.000 315.000	8800. 0	.2438	0015	0235	•			0221				.0371	· ·		

UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAC) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

			• • • •												
LREF = 1	0000.000999999999999999999999999999999	INCHES		⇒ ,	0000 INCH 0000 INCH 0000 INCH	HES.				RN	I/L ≃	5.000	BETA	=	.000
MACH (1	2.9	950 AL	PHA (į) =	.000 PI	INF =	1.1042	G(PS)	() = 6.	7266	RN/L	= 5.020 0	CP	STG =	1.7529
SECTION	(I)ORBITE	R FUSELA	AGE		DEPENDEN	NT VARIA	BLE CP/CI	FS							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	. 1600	. 1650	.1700	. 1750	.1800
PHI				÷											
.000 10.000 20.000 24.500 39.000	. 8588	.4004	.1273	. 1467	·	.1380	.2321	.8044 .3929 .2128 .1560 .1187		0334					
163.000 174.000					•							.6339		.3590	
180.000	.8588	•			.2138			.1698	.1660	.1889	.5608		.6242		.5715
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8820	.9500	.9630	.9750	1.0000	1.0145
PH1 .000 23.000	.0714	.0254 .0172	.0248	.0018	0269		.1610				0651		0723	0700	
24.000 31.500 33.100	.0437 .0420	.0298	•								•				
35.000 40.000 45.000	.0335 .0581	.0402								•	•				
50.000 51.600	.0849												.0019		
57.000 60.900 65.000		.0104 .0135 .0133					,					٠			
68.000 69.000 79.300		.0130			0210			•				• ;	0245		
95,500 95,700	Av. 85	.0178		•	0153		0128					-			
96.300 103.000 105.000	.0495				0135										0554
112.600 117.500 120.800		•			0116				.0734			0050		0029	
127.900 129.500						.2895		.2002							•

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

10020

.0044

.0117

-.0116

-.0128

-.0155

-.0059

.0292

.0829

TABULATED SOURCE DATA - IH4

(RQ3BAC) UPWT 1059 (IH4) 01-T15-98N16 ORBITER FUSELAGE 2.950 - ALPHA ([) = DEPENDENT VARIABLE CP/CPS SECTION (1) ORBITER FUSELAGE X/LB .2000 1.0000 1.0145 .3000 .4000 .5000 .8290 .8620 .9500 .9630 .6008 .7800 .8000 .8050 PHI 130.000 .1300 .0242 .0068 135.000 -.0022 -.0425 139.600 .1468 .0360 144.000 155.000 .1347 180.000 .0773 -.0166 .0069 X/LB 1.0250 1.0500 PHI .000 -.0634 -.0497 MACH (1) = CPSTG = 1.75292.950 ALPHA (2) = = 1.1042 Q(PSI) = 6.7266- 5.0200 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 X/LB .1600 .1650 .1700 .1750 .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 . 1250 .1500 PH1 .000 .7667 .3723 .1820 .2918 .2532 .2270 .6245 -.0461 10.000 . 1909 20.000 .1600 24.500 .1401 39.000 .1116 .2745 163.000 174,000 .4978 .4463 180.000 .4848 .7667 .1517 .1110 .1092 .1270 .4258 X/LB .2000 .3000 .9500 .9630 .9750 1.0000 1.0145 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 PHI .000 .0224 .0530 .0013 -.0183 .0647 .1834 -:0621 -.0701 -.0695 23.000 -.0021 24.000 .0289 31.500 .0111

PAGE

-.0207

-.0353

93

UPWT 1059 (1H4) 01-T15-SUNIG ORBITER FUSELAGE	UPWT	1059	([H4)	01-T15-SUN16	ORBITER FUSELAGE	
---	------	------	--------	--------------	------------------	--

(RQ3BAC)

MACH (1) = 2.950 ALPHA (2) = SECTION (!)ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .9500 .9630 .9750 1.0000 1.0145 .2000 .3000 .4000 .5000 .6000 ,7800 .8000 .8050 .8290 .8620 PH! 69.000 -.0155 79:300 -.0401 95.500 ~.0379 -.02:6 95,700 .0089 96.300 103.000 105.000 .0566 -.0374 -.0569 112.600 -.0362 -.0148 117.500 -.0139 120.800 .0435 127.900 179.500 .0659 .0799 130.000 .0726 .0073 -.0005 135.000 -.0512 -.0283 139.600 .0922 144.000 10001 155.000 .0947 180.000 .0417 -.0399 -.0124 X/LB 1.0250 1.0500 PHI .000 -.0557 -.0476 CPSTG = 1.78393.700 ALPHA (1) = -5.000 PINF .54730 Q(PSI) = 5.2445RN/L 4.9900 SECTION (I) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 X/LB .1600 .1650 .1700 .1750 .0000 .0050 .0200 .0400 .0900 .1000 . 1250 .1500 .0500 .0600 PHI .000 1.0528 .4756 .1558 .1504 . 1454 .0967 .6458 .0154 10.000 .3536 20.000 .0886 24.500 39.000 .0929 .1034 163.000 .4811 174.000 .8569 .7967 .8508 180.000 1.0528 .2948 .2397 .2630 .7415 .2345 X/LB .2000 .3000 .4000 .5000 .6000 .8050 .8290 .9500 .9630 .9750 1.0000 1.0145 .7800 .8000 .8620 PHI .000 .1190 .0299 -.0336 - .0455 -.0465 .0439 .0342 .0136 .1664 23.000 .0353

TABULATED SOURCE DATA - IH4

UPWT 1059 (IH4) 01-T15-98W16 ORBITER FUSELAGE

(RQ3BAC)

PAGE 95

SECTION	(DORBIT	ER FUSELA	AGE		DEPENDEN	IT VARIAE	LE CP 'Cf	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.780σ	.8000	.8050	.0290	.8620	.950C	.9630	.9750	1.0000	1.0145
PHI															
24.000	.0745														
31.500 33.100	.0790	.0527	•				•	-							
35.000	.0751	.036,7				•									
40.000	.0581	.0575								•					
45.000		.0622													
50.000 51.600	.0569												.0148		
57.000		.0378											.01.10		
60.900		.0373							•			+ ,			
65.000		.0359											****		
68.000													0049		
69.000 79.300		.0199			.0150			and the second							
95.500		•			.0163		.0005								
95.700		.0083			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				-						
96.300	.0585														
103.006 105.000					.0182					•					0370
112.600					.0176									•	
117.500					.0.70				•			.0203		.0209	
120.800									.1214	•					
127.900						.1655		2105							
129.500 130.000								.2197	. 1879	.0654		.0263			
135.000		0085			.0169				,5	. 000 1					
139.600									.1960						
144.000												.0608			
155.000 180.000	.2030	0176			,0081										
100.000	.1477	.0135		•	.0001						•		•		
X/LB	1.0250	1.0500							•		•				
m •		•											•		
PHI . onn	- 0452	- 0425		•		•	•	* *				:			

DATE SU AF	-K /6		TABULAT	ED SOURC	E DATA	- 1H4								PAGE	20
				UPA	NT 1059	(IH4) 0 1-	-T15-S8N16	S ORBITE	ER FUSEL/	AGE		(RQ3	BAC)		
MACH (2)	= 3.	700 A	LPHA (2) =	.000	71NF =	.54730	0(PS	1) = 5.8	2445	RN/L	± 4.990	ß CF	STG =	1.7839
SECTION (1)ORBIT	ER FUSEL.	AGE		DEPEND	ENT VARIA	ABLE CP/C	PS							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	. 1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000	. 8734	.4016	.1287	.1431		. 1291	.1107	.7991 .3605 .1345 .0759 .0866		.0019		. <u>.</u>		.3507	
174.000 180.000	.8734				.2007			.1535	. 1511	. 1727	.5308	.6316	.6291		.5955
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .roo 23.000 24.000 31.500 33.100 40.000 45.000 50.000 51.600 57.000 60.900	.0557 .0251 .0184 .0135 .0303	.0234 .0359 .0483 .0430 .0406	.0285	.0146	.0000		.1241		·		0347		0411	0406	
65.000 68.000 69.000 79.300 95.500 95.700 96.300	.0360	.0192		·	0082 0063 0060		0117				r-		0195		
105.000 112.600 117.500 120.800 127.900 129.500 130.000					0063	.2065		. 1844	. 0731 . 1254	.0297		0031		0003	0392
135.000 139.500 144.000		0239		- .	0011				.1102	• 01.01		.0313	· .		
155.000 180.000	. 1403 . 0954	0094			0075			٠							

PAGE 97 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (ROSBAC) UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE MACH (2) =3.700 ALPHA (2) = DEPENDENT VARIABLE CP/CPS SECTION (1) ORBITER FUSELAGE X/LB 1.0250 1.0500 PHI .000 -.0387 -.0348 1.8033 5.0000 MACH (3) =4:600 ALPHA.(1) = PINE 4.0904 -5.000 .27620 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1750 . 1650 .1700 X/LB .0000 .0050 .0206 .0400 .0500 .0600 .0800 .. 1000 . 1250 .1500 .1600 PHI .000 1.1587 .5133 .1656 .1535 .1498 .0892 .5814 .0384 10.000 .3536 20.000 .0846 24.500 .0916 39.000 .0980 .5339 163.000 174.000 .985Ó .9616 .8831 180.000 1.1587 .2493 .2454 .2769 .8173 .3127 1.0000 1.0145 .9630 .9750 X/LB .6000 .8000 .8050 .8290 .8620 .9500 .2000 .3000 .4000 .5000 .7800 PHI -.0265 -.0266 .000 .1034 .0353 .0477 .0222 -.0160 .0471 .1478 23.000 .0336 24.000 .0600 31.500 33.100 .0523 .0329 35.000 40.000 45.000 .0472 .0499 .0325 .0349 50.000 .0628 .0091 51.600 57.000 .0244 50.900 .0200 65.000 .0181 68.000 69.000 -.0020 .0142 79.300 .0168 95.500 95.700 .0187 .0082 .0127 96.300 .0603 103.000 .0169 -.0246 105.000

.0092

112.600

1:7.500

120.800

.0245

.0247

				UPW	T 1059 (1	(H4) 01- 1	[15-S8N]	ORBITE	ER FUSELA	AGE		(RQ3	BAC)		
MACH (3)	= 4.6	300 AL	PHA (1)	= -5	.000										
SECTION (DORBITE	ER FUSELA	AGE		DEPENDEN	NT VARIA	BLE CP/CF	s							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 127.900 129.500 130.500 135.000 139.600 144.000 155.000	.2245 .1612	0012			.0043	.1361		. 1843	. 1839 . 1797	.0790		.0243 .0406		:	· .
X/LB	1.0250	1.0500													
PH1 .000	0270	0260		-											
MACH (3)	= 4.6	500 AL	PHA (2)	=	.000 PI	NF =	.27620	Q(PS)	() = 4.C	904	RN/L =	5.0000) CP	STG =	1.8033
SECTION (1)ORBITE	ER FUSELA	AGE		DEPENDEN	IT VARIAE	BLE CP/CF	23							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	.9185	.4236	. 1845	.1267		.1410	.2171	.6491 .2487 .1647 .1288 .0844		.0026	. •	.6678		.3684	
180.000	.9185				.2049			. 1564	. 1551	.1762	.533 9		.6877		.6748
X/LB	.2000	.3000	4000	.5000	6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	9750	1.0000	1.0145
PH1 .000 23.000 24.000 31.500 33.100	.0608 .0098 .0085	.0191 .0237	.0242	.0220	.0072		.0948				0217		0289	0281	
35.000 40.000 45.000 50.000 51.600	.0112 .0261 .0492	.0479									·		0093		
57.000 60.900		.0106 .0101								• •			, ,,,,,		

TABULATED SCURCE DATA - 1H4

DE DATA - 1H4 PAGE 99

O///2 20 ///			1 DEGEN :	_0 0000	L DAIN	••••									
				UPW	IT 1059 (1	(H4) Ol-	T15~58N16	ORBITE	ER FUSELA	/GE		(RQ3E	BAC)		•
MACH (3)	= 4,	600 AI	LPHA (2:) =	.000										
SECTION (DORBIT	ER FUSEL	AGE		DEPENDEN	NT VARIA	BLE CP/CF	ot.						*	
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 65.000 68.000 79.300 95.500 95.700 96.300 103.000 112.600 117.500 127.900 129.500 139.600 135.000	. 0477	.0062 .0059 .0059			.0012 .0008 .0011 .0010	.1172	0075	.1550	.0775 .1157 .0915	.0328		.0015	0109	.0024	0272
155.000 180.000	. 1525 . 1164	.0005			0089										
X/LB	1.0250	1.0500										-		•	
PHI .000	0278	0265													

.800

.900

.950

-.0326

-.0326

-.0356

.0398

-.0252

-.0189

UPWT 1859 (1H4) 01-T15-S3N16 ORB. UPPER WING

(RQ3UAC) (15 APR 76)

PARAMETRIC DATA REFERENCE DATA .000 SREF = 2690.0000 SQ.FT. 5.000 BETA = XMRP .0000 INCHES RN/L ≖ LREF = 1290.3000 INCHES YMRP .0000 INCHES BREF = 1290.3000 INCHES .0000 INCHES .0100 CPSTG = 1.7529**5.0200** Q(PS1) = 6.7266RN/L MACH (11 = 2.950ALPHA(1) =.000 PINF = 1.1042SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SAVBM .4000 .6000 .8000 X/CW .050 .0767 .200 -.0131 .0011 .0578 .600 -.0603 -.0617 .900 -.0691 .900 .0591 -.0503 .950 -.0541 Q(PSI) = 6.7266**= 5.0200** MACH (1) = 2.950 ALPHA (2) = 5.000 PINF S-101.1 = SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA\BM .4000 .6000 .8000 X/CW .0672 .050 .200 -.0342 -.0194 -.0754 -.0735 .600 .800 -.0745 .900 .0592 ~.0640 .950 -.0594 MACH (2) = 3.700 ALPHA (1) = ~5.000 **- .547**70 Q(PSI) = 5.2445RN/L SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CF/CPS 2Y/BW .4000 .6000 .8000 X/CH-.1075 .050 .200 .0156 .0335

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DATE 20 APR 76
                                                                                                                          PAGE 101
                           TABULATED SOURCE DATA - IH4
                                        UPWT 1059 (IH4) 01-T15-SEV16 ORB. UPPER WING
                                                                                                           (RQ3UAC)
                                                                                                                     CPSTG = 1.7839
                3.700
                         ALPHA ( 2) =
                                                                                                         4.9900
                                            .000
                                                                         Q(PSI) = 5.2445
SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
SA/BM
            .4000
                     .6000
                             .8000
 X/CM
    .050
           .0714
    .200
                             .0617
                    .0117
    .600
           -.0423
                   -.0390
    .800
                    -.0426
    .900
                    .0387
                           -.0285
    .950
                    -.0326
MACH (3) =
                4.600
                         ALPHA ( 1) =
                                                                                               RN/L
                                                                                                         5.0000
                                                                                                                               1.8033
SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP'CPS
SA/BM
            .4000
                     .6000
                             .8000
 X/CM
            .1065
.0210
    .050
    .200
                    .0423
                             .1091
    .600
           -.0189
                   -.0138
    .800
                    -.0191
    .900
                     .0405
                             .0016
    .950
                    -.0103
                                                                                                                               1.8033
MACH (3) =
                                                                                                                     CPSTG
                4.600
                         ALPHA (2) =
                                                                                                          5.0000
SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP CPS
2Y/BW
             .4000
                     .6000
                             .8000
 XVCM
    .050
           .0635
-.0004
                     .0145
                             .0630
    .600
           -.0263
                    -.0241
    .800
                    -.0242
    .900
                    .0379
                           . -.0129
    .950
                    -.0155
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(15 APR 76)

(RQ3LAC)

UPWT 1059 (1H4) 01-T15-S8N16 ORB. LOWER WING

	REFERENCE DA	ATA								PARA	METRIC	DATA		
LREF = 12	90.0000 SQ.FT. 90.3000 INCHES 90.3000 INCHES .0100	XMRP = YMRP = ZMRP =	.0000 INCHE	5				F	?N/L =	. 5	5.000	BETA =		.000
MACH (1)	= 2.950 A	LPHA (1) =	.000 PIN	NF =	1.1042	Q(PSI) = 6.	7266	RN/L	= Ė	5.0200	CPSTG	=	1.7529
SECTION (1) ORB. LOWER WI	NG	DEPENDENT	T VARIA	BLE CP/CF	? S						•		
SA\BM	.2500 .3011	.3480 .4000	.5000	.6000	.7500	.8500	.9500	.998	0					
X/CW .000 .001 .002 .003 .004 .005	0025	0146	. 1548	.3043 .0794 .0386 .3596 .1313	.3128	.3483 .0569 .0446 .3658 .1017		0253	3	·	•			
.025 .045 .100		.0074 .0074		.0293	. 0599	.0486	.0524	:						
.153 .177	0163		.0267											•
.302 .428	0112	.0486	-	.0418	.0378								٠.	
.444 .487 .559 .600 .700	0158	. 1345	.1203	.1076 .1251										
.736 .800 .850 .900	.1736	019	1	.1113 .0703 .0275	.0522		0302				·		•	
MACH (1)	= 2.950 /	NLPHA (2) =	5.000 PM	VF =	1.1042	· Q(PSI) = 6.	7266	RN/L	= 5	5.0200	CPSTG	*	1.7529
SECTION (1)ORB. LOWER WI	ING	DEPENDENT	T VARIA	BLE CP/C	PS								
51/8M	.2500 .3011	.3480 .4000	.5000	.6000	.7500	.8500	.9500	.998	0		•			
X/CW .000 .001 .002 .003 .004	0227	0228	.2700	.3617 .1127 .0722 .4035 .1730	,3703	.3788 .1169 .0979 .3355 .1722		051	5					

TABULATED SOURCE DATA - IH4

PAGE 103

UPWT 1059 (IH4) 01-T15-S8N:6 ORB. LOWER WING (RQ3LAC) MACH (1) = 2.950 ALPHA (2) =5.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CH .025 .0907 .1004 . 1254 .045 .0984 . 100 .0630 .1118 . 1129 . 153 -.0235 .177 .200 .0455 .0346 .299 -.0251 .302 .0442 .0804 .428 .0623 .444 .0449 .487 .1703 .559 .1853 .600 .1830 .700 .2345 .736 .1970 .800 .850 .1723 .1106 .900 -.0262 .0545 .1302 .0070 MACH (2) = 3.700 = 1.7839 ALPHA ([) = -5.000 PINF = .54730 O(PS1) = 5.2445RN/L 4.9980 CPSTG SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS 2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 . .9500 .9980 X/CM .000 .2396 .3343 -.0020 .001 .0312 .0133 .1893 .0326 .2609 .0339 .002 .0054 .0175 .003 .3822 .4189 .004 .0608 .0626 .005 .0160 .0205 .025 .0129 .0105 .0254 .045 .0141 .100 .0070 .0187 .0279 . 153 .0287 .177 -.0091 .200 .0041 .0140 .299 .302 .0318 .0284 .428 .0387 .444 .01:5 .487 .1265 .1198 .559 .600 ..1030

UPWT 1059 (1H4) 01-T15-SBN16 ORB. LOWER WING (RQ3LAC) MACH (2) = 3.700 ALPHA (1) = -5.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CFS SA/BM .2500 .3011 .4000 .5000 .6000 .7500 .8500 . 9500 .9980 . 3480 X/CM .700 .0941 .736 .1870 .800 .0884 .0633 .850 -.0083 .0342 .0371 .54730 Q(PS1) = 5.2445MACH (2) = 3.700 ALPHA (2) = SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CFS .7500 .9980 SA\BM .2500 .3011 .3480 .4000 .5000 .6000 .8500 X/CW .2332 -.0110 .000 .3419 . 1533 .2807 .0611 .001 .0125 -.0023 .0038 .0411 .002 .3691 .003 .3368 .1115 .0729 .005 .0156 .0416 .025 .0102 .0439 .0104 .045 .0115 .100 .0054 .0442 .0579 .153 .177 .0021 -.0099 .200 .299 .302 -.0093 .0026 .0004 .0303 .428 .0436 -.0038 .487 .0805 .559 .0791 .600 .700 .736 .800 .0811 .0761 .1098 .0808 .850 .0646 -.0125 0398 .0388 .900 -.0254

. 100

. 153

.177

.200

.0129

.0022

.0129

.0018

.0127

.0000

.0459

.0586

PAGE 105 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (RQ3LAC) UPWT 1059 (1H4) 01-T15-S8N16 ORB. LOWER WING CP5TG = 1.8033RN/L = 5.0000 Q(PSI) = 4.0904ALPHA (1) = -5.000 PINF. .27620 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .6000 .8500 .9980 SANBM .2500 .3011 .3480 .4000 .5000 .7500 X/CM .3770 .0079 .2597 .000 .0393 .0237 .2022 .0481 .3118 .0625 .001 .002 .0396 .0193 .4573 .3898 .003 .0914 .0958 .004 .0457 .0298 .005 .0301 .0235 .0444 .025 .045 .0228 .100 .0167 .0404 .0468 .0362 . 153 .0020 .177 .0083 .200 .299 .0197 .0238 .0120 .0326 .428 .444 .0214 .0930 .487 .559 .1057 .0905 .600 .0662 .700 .736 .1623 .800 .0752 .0617 .850 -.0097 .0000 ,900 .0412 .0368 5.0000 1.8033 Q(PS1) = 4.0904MACH (3) =4.600 ALPHA (2) = .000 PINF = .27620 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 SA/BM . .2500 3011 ,3480 .4000 .5000 .6000 .7500 .8500 X/CH .2262 -.0023 .000 .1557 .0433 .0651 .0213 100. .0147 .002 .0426 .003 .3162 .3854 .1034 .004 .0833 .005 .0257 .0467 .0136 .0483 .025 .0241

DATE 20 APR 76	TABULATED SOURCE DATA - IH4	P	PAGE 10B

(RQ3LAC)

UPWT 1859 (IH4) 01-T15-S8N16 OR8. LOWER WING MACH (3) = 4.600 ALPHA (2) = .000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SANBM .9500 .2500 .3480 .4000 .5000 .6000 .7500 .8500 .3011 X/CM .302 .428 .444 .487 .559 .600 .700 .736 .800 .850 .0048 .0301 .0469 .0022 .0616 .0776 .0594 .0555 .1018 .0590 .0558 .0437 .0334 -.0039

-.0052

TABULATED SOURCE DATA - IH4

PAGE 107

UPWT	1059	([H4)	01-TI5-S3NI6	ORB.	VERT.	TAIL

(15 APR 76)

(RQ3VAC)

REFERENCE DATA		•	PARAMETRIC DATA
SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = BREF = 1290.3000 INCHES ZMRP = SCALE = .0100	.0000 INCHES .0000 INCHES	RN/L ∞	5.000 BETA = .000
MACH (1) = 2.950 ALPHA (1) =	.000 PINF = 1.1042 Q(PSI)	■ 6.7266 RN/L	= 5.0200 CPSTG = 1.7529
SECTION (1)ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS		•
Z/BV .2990 .5320 .7650 .9	050		
X/CV .000 .4152 .3989 .3175 .4 .300 .1363 .0850 .0571 .500 .1076 .7000066 .900031101890077	112		
MACH (1) = 2.950 ALPHA (2) =	5.000 PINF = 1.10 Q(PSI)	= 6.7266 RN/L	= 5.0200 CPSTG = 1.7529
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS		
Z/8V .2990 .5320 .7650 .9	950	·	
X/CV .000 .3260 .3261 .2338 .3 .300 .0989 .0396 .0225 .500 .0650 .7000234 .900045603400275	092		
MACH (2) = 3.700 ALPHA (1) =	-5.000 PINF = .54730 Q(PSI)	= 5.2445 RN/L	= 4.9900
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CF/CPS		
	050		•
X/CV .000 .4886 .4109 .3682 .5 .300 .1360 .0536 .0514 .500 .1140 .700 .0292	014	· · · · ·	
.9000020 .01880043			

•		-										
			UPWT 105	9 (IH4) (01-T15-58V16	ORB. VERT.	TAIL		(RQ3VAC)			
MACH (2)	3.700	ALPHA (2)	⇔ .000	PINF	- .5473)	Q(PSI) =	5.2445	RN/L	- 4.9900	CPSTG	#	1.7839
SECTION (DORB. VERT. T	AIL.	DEPE	NDENT VAF	RIABLE CP/CPS							
2/8V	.2990 .5320	.7650	.9050									
X/CV .000 .300 .500 .700 .900	.4156 .3478 .0977 .0504 .0707 .0050 01350005	.0320	. 3595									
MACH (3)	= 4.600	ALPHA (1)	≈ ~5.000	PINF	= .27627	Q(PSI) =	4,0904	RN/L	<u> 5.0000</u>	CPSTG	*	1.8033
SECTION (1)ORB. VERT. T	AIL	DEPE	NDENT VAF	RIABLE CP'CPS							
Z/BV	.2990 .5320	.7650	.9950				4					
X/CV .000 .300 .500 .700 .900	.3972 .3935 .0762 .0513 .0702 .0280 .0038 .0199	.3895 .0487 0021	.5254									
MACH (3)		ALPHA (2)	= .000	PINF	≖ .27620	Q(PSI) =	4.0904	RN/L	<u> 5.0000</u>	CPSTG	=	1.8033
SECTION (1)ORB. VERT. T	A :	DEPE	NDENT VAF	RIABLE CP/CPS							
Z/BV ·	.2990 .5320	.7650	.9050				•					
X/CV .000 .300 .500 .700	.3726 .3537 .0583 .0321 .0379 .0019		.3534									

123.000

.1725

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAC) (15 APR 76)

PAGE 109

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
LREF = 1290.3000 INCHES YMRP = .0000 INCHES
BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
SCALE = .0100

MACH (1) = 2.950 ALPHA (1) = .000 PINE = 1.1042 G(PSI) = 6.7866 RN/L = 5.0200 CPSIG = 1.7525

MACH ()	= 2.9	150 At	LPHA (1	1 = '	.000 P	INF =	1.1042	0(29	ii) = 6.	7266	RN/L	= 5.020	o cp	STG =	1.7529
SECTION (BLE CP/C				···				
X/LT	0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	. 3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000				3686	.2162	.0575	0048	0241	0203 0211	0018 .1760 .0299	.5676 .0930 .0325		0079 0131 .0055 .0287	0118	.0375 .0367 0442 0470 0389 .0073 .0522
167.000 180.000 197.000 210.000 220.000	.9833	.7156	.7009	.3636	.2253 .2252	.0579 .0714 .0679	-,0048	0187		0170 0149	•		.0399	.0670	.0786 .0786 .0573
225.000 232.000												.0727			.0555
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000 157.500	.0852	0598 0473 .0008	. 0183	0459 0469 0296 0501		.0034 0209 .0050 0020		.0084 0196 .0020 .0060 .0375 0001	.0044 .0406 0052 0007	0012 0263 .0294 .0202	0069 +550 e150. 0090	0094 0001 0029 0232 .0132	0282 .0077 0210 .1175	. 0376	.0084 .0431 .0945 .1096 .1083 .1005
157.500 161.000 166.000 180.000 197.000 210.000 220.000 232.000	.0852	.1966	.1077		.0055	.0296	.0526	.0391	.0127	.0025	0148	.0367	.0709	•	.1281
X/LT . THETA	. 9250	.9350	.9370	.9750											

DRIGHTAND BOOK NO TOTAL

UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAC)

PAGE 110

MACH ([) = 2.950 ALPHA(1) =SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9370 .9750 .9250 .9350 THETA 151.000 .1428 180.000 . 1396 -.0571£19.000 . 3384 5.0200 CPSTG **≖ 1.7529** 2.950 ALPHA (2) = PINF = 1.1042 Q(PSI) = 6.7268RN/L 5.000 SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 X/LT .2750 .3000 .3250 .3350 .3500 .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 THETA .0338 .000 .4497 .2845 .0981 .0323 45.000 -.0077 .0027 .0375 57.500 90.000 -.0111 -.0174 -.0108 .2195 .6335 -.0198-.044! .1473 -.0378 -.0683 112.500 -.0208 -.0271 .0104 -.0094 .0054 135.000 -.0036 157.500 .0489 . 0469 167.000 .0378 180,000 .6175 .6100 .2673 .1604 .0268 -.0239 -.0345 -.0315 .0359 .0461 .9769 197,000 .0385 -.0297 .1711 .0391 210.000 .0352 -.0253 220.000 .0530 225.000 .0143 232.000 .9000 .8000 .8500 .8750 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 THETA -.0016 .0138 .000 45.000 .0116 .0068 .0056 .0774 67.500 .0215 .0177 .0128 -.0129 -.0003 .0167 .1327 .0395 90.000 -.0499 -.0508 -.0223 1850. .0251 .0142 .0100 . 1347 .0218 .0160 .0094 .0059. .0589 112.500 -.0708 -.0530 -.0439 .0106 -.0005 123.000 .0966 .1415 .1405 135.000 -.0133 .0032 -.0142 -.0166 -.0003 .0095 .0069 .0077 .1185 157.500 .0713 -.0136 -.0210 .0043 .0438 .0826 .1568 .0833 .0049 .0397 .0001 -.0001 .0769 161.000 166.000 .0322 -.0156.1631 .0356 .0073 .0401 .0916 180.000 .2124 . 1462 .0483 1510. -.0126 .0228 .0085 .0010 -.0146 . 1826 197.000 .0316 -.0162 210.000 .0024 .0023 220.000 .0383 .0203 232.000 .0163 .0066

DATE 20 API	P. 76		TABULAT	ED SOURCE	DATA -	IH4								PAGE	111
				บคพา	r 1059 ([H4) 01-	T15-SBN1	6 EXTER	NAL TANK			(RQ3	TACI		
MACH (1)	a 2.9	950 AL	S) AH9.	3 = 5	.000							•			
SECTION (DEXTER	VAL TANK			DEPENDE	NT VARIA	BLE CP/C	l‡S			-				
X/LT	.9250	.9350	.9370	.9750											
THETA 123.000 151.000 180.000 210.000	. 1921	.1788	.1555 .3519	 0551			·								·
MACH (2)	= 3.7	70 0 AL	PHA (1) = -5.	.000 P	INF =	.54730	QtPS	1) = 5.	2445	RN/L	- 4.990	0 CP	STG =	1.7839
SECTION (DEXTER	NAL TANK			DEPENDE	NT VARIA	BLE CP/C	fS							
X/LT	.0000	.0050	.0100	.0400	.0800	. 1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 +5.000 97.500 90.000 135.000 157.500 167.000 197.000 210.000 225.000 225.000 232.000	•9790	.7732	.7309	.2657 .4406	.1411 .2787 .2768	.0207 .0952 .1103 .1035		0152	0101	0099 .1424 .0158 .0094	.5028 .0607 .0286	.0730	0220 .0080 .0732 .0586	.0203	.0115 0097 0377 0173 .0200 0052 .0804 .1068 .0854 .0748 .0494
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000 157.500 166.000 180.000 197.000 220.000 232.000	.1066 .0973 .2194	0258 0041 .0540 .1504	.0451	0472 0289 0023 .0859 .0659 .0179 .0659 .0377	.0325	0236 .0166 .0314 .0327	.0478	0041 0291 0335 .0073 .0229 .0257 .0482 .0320 .0471	0323 .0565 .0140 .0281	0233 .0038 .0434 .0329 .0228 .0299 .0272 .0334	0179 .0009 .0402 .0319 .0165	0190 0181 0131 0282 .0270 .0340 .0092 .0244	0094 .0272 .0043 .0907 .0631	.0510	.0100 .0079 .0442 .0975 .1124 .0981 .1220

UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAC)

MACH (2) == 3.700 ALPHA(1) = -5.000SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CP3 X/LT .9250 .9350 .9370 .9750 THETA 123,000 .1458 151.000 . 1887 180.000 . 1651 -.0331 210.000 .2846 MACH (2) = 3.700ALPHA (2) = 1.7839 .54730 Q(PSI) = 5.2445RN/L SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CP:3 X/LT .0000 .4000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 THETA .000 .3423 .2001 .0519 .0221 45.000 .0069 67.500 -.0016 .0141 -.018890.000 -.0005 --.0105 -.0023 . 1321 .5360 .0130 -.0117112.500 .0384 .0238 -.0158-.0122 .0018 135,000 -.0029 .0011 .0308 .0002 157.500 .0642 167.000 .0682 180.000 .9715 .3389 .2063 .0552 .0565 .0644 .6588 .6970 .0027 -.0094 -.0105-.0016 197.000 0805. .0659 -.0092210.000 .0509 .0634 220.000 .0188 225.000 .0505 232,000 .0849 X/LT .4250 .4500 .4750 .5000 .5250 .5750 .6000 .8000 .8500 .8750 .9000 .5500 .6500 .7000 .7500 THETA .000 .0053 -.0093 45.000 .0199 ..0142 -.0029 67.500 -.0284 -.0149 -.0020 · -.0011 -.0047 -.0077 .0420 -.0106 90.000 -.0310 -.0355 -.0233 .0024 -.0059 -.0089 -.0138 .0289 112.500 -.0264 -.0259 -.0209 .0052 .0168 .0260 .ozzo. .0173 .0160 .0275 123.000 .068! -.0029 .0212 .0717 135.000 .0032 .0612 .0259 .0023 .0082 -.0011 .0041 .0059 .0743 157.500 .0722 .0825 .0347 .0571 .0143 .0277 .0093 .0050 -.0035 .0206 .0340 .0721 161.000 .0754 166.000 .0614 .0211 .2327 180,000 . 1249 .0310 .0916 .0466 .0223 .0326 .0198 .0271 .0372 .0196 .0058 -.0037 .0621 197.000 .0559 .0208 .1079 210.000 .0045 .0263 220.000 .2710 .0197 232.000 -.0025 .0127

DATE 20 APR 76 TABULATED SOURCE DATA - IH4

PAGE 113 (RQ3TAC) UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK 3.700 MACH (2) = ALPHA (2) = DEPENDENT VARIABLE CP/CPS SECTION (1) EXTERNAL TANK X/LT .9250 .9750 .9350 .9370 THETA 123.000 .0917 151.000 .1000 180.000 .1297 -.0325 210.000 .2568 1.8033 MACH (3) =4.600 ALPHA (1) = -5.000 .27620 Q(PS1) = 4.0904RN/L 5.0000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 X/LT .0000 .0050 .0100 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .0400 .0800 THETA .0046 .000 .2550 .1354 .0255 -.0041 45.000 -.0201 -.0048 67.500 -.0036 .0996 .3363 .0194 -.0004 90.000 .0069 -.0053 .0043 .0137 112.500 .0084 .0137 .0614 .0235 .0243 .0100 .0029 135.000 .0224 157.500 .0674 .0906 167.000 .0344 .0846 .0120 180.000 .4244 .2671 .0906 .0296 0141 .0117 .9879 .7362 .7586 197.000 .0135 .2640 .1035 .0726 210.000 .0983 .0465 220.000 225.000 .0525 232.000 .1176 .8750 .9000 .8500 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 6000 .6500 .7000 .7500 .B000 THETA - 0032 -.0085 .000 .0039 45.000 -.0200 -.0151 .0099 67,500 -.0268 -.0210 -.0185 -.0144 -.0126 - 0190 90.000 -.0112 -.0158 -.0148 0018 .0172 .0140 .0074 .0047 .0140 .0370 .0492 .0390 .0310 .0441 112.500 .0039 .0053 .0180 0240 .0375 .0122 .0326 .0995 123.000 .0933 135.000 . 0232 .0322 .0282 .0734 .0573 .0872 .0434 0245 .0231 .1078 .0532 157.500 .0925 .1286 .0493 .0637 .0363 0567 .0215 .0291 .0158 .0211 161.000 .0862 165.000 .0318 .0441 .1273 .0194 .0762 180.000 .1926 .2756 .0606 .0407 .0444 .0483 .0462 0302 .0238 .0359 .0268 .1171 197.000 .0362 .0499 210.000 0422 .0256 .3763 .0411 220.000 232.000 0260 .0254

220.000

232.000

.3493

UPWT 1059 (1H4) 01-715-S8N16 EXTERNAL TANK

(RQ3TAC)

.0059

.0067

.0173

MACH (3) = 4.600 ALPHA (1) = -5.000

SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1321 .1633 151.000 180.000 . 1483 -.0193 210.000 .2478 CPSTG = 1.8033 5.0000 MACH (3) =4.600 ALPHA (2) =.27620 Q(PSI) = 4.0904RN/L SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3000 .3250 .3350 .3500 .3750 .4000 X/LT .2750 .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 THETA .000 .0187 .3390 .1994 .0547 -.0049 45,000 -.0060 .0234 .0073 67.500 .0053 .0674 .3068 .0257 .0030 90.000 .0042 -.0009 -.0039 112.500 .0047 .0083 .0061 .0275 -.0031 -.0017 135.000 .0085 .0138 .0466 157.500 .0396 167.000 .0309 .0427 180.000 .9858 .2048 .0558 .0073 .0063 .0204 .6579 .6630 .3352 .0092 .00%6 197.000 .2025 .0650 .0422 210.000 .0631 .0189 220.000 .0293 225.000 .1115 232.000 .9000 X/LT .4250 .7500 .8000 .8500 .8750 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 THETA -.0030 .000 -.0009 .0045 -.0027 45.000 -.0091 .0318 67.500 -.0178 -.0088 -.0021 -.0012 -.0051 -.0043 90.000 -.0150 -.0209 -.0154 .0013 .0009 .0012 -.0009 -.0042 .0309 .0479 .0192 .0180 .0165 112.500 -.0144 -.0150 -.0144 .0027 .0064 .0196 .0028 .0177 .0700 123.000 135.000 .0046 .0046 .0072 .0394 .0632 .0208 .0690 .0277 .0064 .0084 .0726 1050. .0002 157.500 .0369 .0566 -.0322 .0529 .0165 .0248 .0104 .0071 .0004 161.000 .0487 166.000 .0692 .0258 .1000 180.000 . 1248 .1630 .0605 .0453 .0207 .0218 .0267 .0172 .0089 .0188 .0093 .0013 .0370 .0967 .0204 197,000 .0791

.0182

-.0012

MACH (3) =

TABULATED SOURCE DATA - 1H4

.9750

PAGE 115

UPWT 1059 (1H4) 01-T 5-S8N16 EXTERNAL TANK

ALPHA (2) =

SECTION (1) EXTERNAL TANK .9250

4.600

.9350

DEPENDENT VARIABLE CP/CPS

X/LT

.1010

THETA 123.000 151.000 180.000

.1135

.1428 .2013

.9370

(RQ3TAC)

(RQ3SAC)

.0133

UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT. BSTR.

				احان	41 INDB (104) OI-	. 1 1 3-28M1	D 20F1D	HCKI. E	soin.		thuss	HÇ) (IJ M N	
	REFE	RENCE DA	ATA									PARAMETRI	C DATA		
ESCF = 1	0000.0000 0003.000 0100.3000	INCHES	YMRP	=	0000 INC 0000 INC 0000 INC	HES				RN	1/L ¤	5.000	BETA	2	.000
MACH (1)	= 2.9	950 <i>A</i>	ALPHA (1) =	.000 P	INF =	1.1042	QCPS	1) = 6.	.7266	RN/L	⇒ 5.0200	CP	STG =	1.7529
SECTION (1)SOLID	RCKT. E	STR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.5000
PSI 90.000 180.000 25.000 247.500	1.0874		. 1088	.1115 .1241		.1125		5010	·	.0188	0204	0457	0050 .0377 .0404 .0296	.0150	.0198 .0155
260.000 270.000 315.000		.2510	. 1527	.0916	.0941	.3561	76 99	.6012	0397	0110	0530	0455 0467	.0052	0310	0271
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	9250	.9300	.9400	.9500	.9600	.9900			
PS! 90.000 180.000 210.000	.0022 .0049	.0943 .1455	0215 .1497	.0165	0052	.1688		.055% .0715 .0166		0350	.0515	.0973 .0086			
215.000 225.000 240.000 247.500	0046	.2182	.1069	0595	,		0284	0244 0447	0657		0796 0446 0427	0464	•		
270.000 315.000	0303 0251	.3309	0466	0657	•			0490				.0549	•		
MACH (1)	= 2.9	950 /	ILPHA (2	:) =	5.000 P	INF ≃	1 1042	Q(PS	(I) = 6.	.7266	RN/L	= 5.0200	CF	STG =	1.7529
SECTION	1)SOLID	RCKT. E	BSTR		DEPENDE	NT VARIA	BLE CP/C	:PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	1.0641		.0992	. 1034 .0696		.1056 .0502		.5878		0434	0428		0226 0036 0044 .0323	. 0255	.0082 -0082
270.000 315.000		.2507	. 1527	.0897	.0940	. 1872	.9212	9166.	0400	0451	0465	0484 0099	.0117	. 0240	.0133

(RQ3SAC) UPWT 1059 (1H4) 01-TIE-SBNIG SOLID RCKT. BSTR. MACH (1) =2.950 ALPHA (2) = 5.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .9300 .9400 .9500 .9500 .9900 .7000 .7800 .8000 .9000 .9100 .9200 .9250 PSI .0297 90.000 .0932 -.0019 .0786 .0094 .0975 .0512 180.000 .1020 .0043 .2148 .0585 .0253 210.000 -.0034 1150. -.0204 .1660 -.0780 215.000 -.0459 -.0695 225.000 .1472 .0924 -.0455 -.0113 -.0371 240.000 -.0234 -.0430 -.0315 247.500 .0764 .0593 .0635 -.0279 270.000 .1591 -.0598 -.0459 315.000 -.0016 **CPSTG** = 1.7839 MACH (2) =3.700 ALPHA (1) = PINE .54730 Q(PSI) = 5.2445RN/L 4.9900 -5.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .2000 .4000 .5000 .6000 X/LSRB .1300 .1500 .3000 .0000 .0040 .0250 .0500 .1000 .1100 .1150 PSI 90.000 -.016B 1.1944 .1034 .1018 .1023 .0126 .0471 180.000 . 1669 .2009 .0381 .0701 225.000 .0807 .0438 .0307 -.0067 .0438 247.500 260.000 -.0099 270.000 . 2883 .1810 .1070 .0653 .1739 .9133 -.0108 -.0122 -.0186 -.0250 -.0048 .0008 ~.0462 315.000 X/LSRB .7000 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900 .7800 PSI -.0114 90.000 -.0241 .0056 -.0321 -.0049 180.000 .0134 .1799 .0188 .0776 .0445 .0079 .1489 210.000 -.0082 .0233 .2189 .0304 -.0435 215.000 .0303 -.0291 -.0238 .0329 225.000 .2071 .0471 -.0277 -.0306 -.0338 240.000 -.0178 247.500 .0148

-.0300

270.000

315.000

-.0104

-.0163

.2865

-.0273 -.0400

				UPM	IT 1059 (IH4) 01-	T15-58NI	e sorid	RCKT. BS	STR.		(RQ3	SAC)		
MACH (2)	= 3.7	00 A	LPHA (2) =	.000 P	INF =	.5+730	QCPS	I) = 5.2	2445	RN/L	= 4.990	O CP	STG =	1.7839
SECTION (1)50L1D	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSR8	.0000	.0040	. 0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	6000
PSI 90.000 180.000 225.000 247.500 260.000	1.1994		.1059	.1069 .1326		.1074		.7199		.0382	0105	0313	0057 0162 .0009 .0080	.0180	. 0262 . 0185
270.000 315.000		.2916	. 1649	. 1084	.0947	1424	.6063	******	0138	.0039	0190	0323 0293	0032	0095	0153
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000	0026 .0044	.0847 .1197	0184 .1309	.0318	0025	. 1548		.0370 .0757 .0298		0039	.0501	.0552 .0179			
215.000 225.000 240.000 247.500	.0070	. 1134	.0871	0328			.0073	.0183 0281	0322		0453 0204 0230	0260			
270.000 315.000	0151 0140	.3244	0255	0371				0297				.0391			
MACH (3)	= 4.6	00 A	LPHA. (1) = -5	i.000 P	INF =	.27620	Q(PS	I) = 4.(904	RN/L	= 5.000	O CP	STG =	1.8033
SECTION (11SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS							-
X/LSR8	.0000	.0040	.0250	.0500	.0750	.1000	.:100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.500	1.3482	•	.1053	.1032 .2095		.1038 .1694				.0225	.0086	0009	0088 .0060 .0556 .0293	.0525	.0392 .0403
260.000 270.000 315.000		.3271	.2044	.1161	.0943	.1725	. 3044	.3412	0022	.0021	0040	0146 0268	0044	.0137	.0070
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
P51 90.000 180.000 210.000	0114	.0258 .1306	0171 .1783	.0257	.0244	.1901	gu tra	.0021 .0801 .0498	0000	.0097	. 0590	0020 0221			
215.000 225.000 240.000		. 1299	.0814	0117			.0430	.0411	0095		0233 0046 0138	0167			

				UPW	T 1059 ()	IH4) 01-	T15-58N1	6 SOLIC	RCKT. B	STR.		(RQ3	SAC)		
MACH (3.	. = 4.6	500 /	NLPHA (1) = -5	.000							•			
SECTION	(1)SOLID	RCKT. E	STR		DEPENDE	NT VARIA	BLE CP/C	:PS							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900			
PSI 247.500 270.000 315.000	.0257 .0016 0092	. 2833	0107	0247				0191	•		·	.0387			
MACH (3)) = .4.6	300 A	ALPHA (8	?) =	.000 PI	INF =	.27620	Q(PS	1) = 4.(904	RN/L	= 5.000	10 CP	STG =	1.8033
SECTION	1150110	RCKT. E	STR.		DEPENDEN	NT VARIA	BLE CP/C	PS				_			
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	1.3759		.1088	. 1 083 . 1426		.1089 .1100				.0093	0035	0184	0017 0103 0049 .0117	.0121	.0252 .0202
260.000 270.000 315.000		.3377	.2097	.1189	.1214	. 1258	.3530	. 3794	.0007	.0240	0033	0209 0182	0037	0055	0059
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900			
PSI 90.000 180.000 210.000	0019 .0093	.0738 .1172	0061 .1306	.0225	.0164	.1250		.0275 .0569 .0241		.0030	.0388	.0314			
215.000 225.000 240.000 247.500	0000	. 1408	.0496	0148			.0116	.0133 0141	0183		0268 0134 0192	0177			
270.000 315.000	.0099 9200 9200	.1683	0161	~.0224		•		0176				.0380			

UPWT 1059 (IH4) 01-T15-98N16 ORBITER FUSELAGE

(ROSBAD) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

LREF =	2690.0000 1290.3000 1290.3000 .0100	INCHES	YMRP :	= .[0000 INC 0000 INC	HES				RN	1/L =	3.000	BETA	-	5.000
MACH (I) = 3.5	700 AL	PHA (1) = -5.	.000 P	INF =	.32910	QtPSI) = 3.1	537	RN/L	= 3.000	B CP	STG =	1.7839
SECTION	(1)ORBITE	ER FUSEL/	AGE		DEPENDE	NȚ VARIA	BLE CP/CF	s							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	. 1500	.1600	. 1650	.1700	. 1750	. 1800
PHI .000 10.000 .20.000 24.500 39.000 163.000	1.2217	. 5279	. 1873	1973		.1915	. 15.74	.9360 .3995 .1337 .1795 .1812	. •	.0167				.6956	. · · · ·
174.000 180.000	1.2217				.4057			.3391	-3341	.3791	.9335	1.1009	1.0181		.9390
X/LB	.2000	.3000	.4000	5000	.6000	.7800	.80 00	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 33.100 35.000 40.000 45.000	.1112 .1340 .1138 .0919 .0965	.0611 .0634 .0784 .0850	.0398	. 0260	.0387		.2179				0325			0454	
51.600 57.000 60.900 65.000 68.000 69.000 79.300 95.500		.1144 .0904 .0788 .0779		· · · · · · · · · · · · · · · · · · ·	. 0593 . 0639		.0483	·					.0444		
95.700 95.300 103.000 105.000 112.600 117.500 120.800 127.900 129.500	. 1362	.0531			.0651	.4121		.3714	. 2279			.0713	٠.	.0738	0336

PAGE 121

DATE 20 AP.	R 76		TABULAT	ED SOURC	E DATA -	IH4					*			PAGE	151
				บคพ	IȚ 1059 (IH4) OI-	T 5-58N18	orbiti	ER FUSEL	.AGE	,	(RQ3	BADJ		
MACH (1)	≃ 3,	700 AI	_PHA (i) = -5	i.000										
SECTION (1)ORBITE	ER FUSEL/	AGE	-	DEPENDE	NT VARIA	BI.E CP/CF	PS							
X/LB	.2000	.3000	.4880	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0800	1.0145
PHI 130.000 135.000 139.600 144.000		.0113			.0689				.2780 .2327	.1045		.0592			
155.000 180.000	.3294	.0195		•	.0380		<i>,</i> •		-			.0046		•	
X/LB	1.0250	1.0500													
PHI .000	0457	0415													
MACH (1)	= 3.	700 AL	_PHA (E	?) <u>=</u>	.000 P	INF =	.32910	Q(PS	() = 3.	1537	RN/L	× 3.000	O CP	STG =	1.7839
SECTION (I)ORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/CF	- S							
X/LB	.0090	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000	.847 4	. 3942	. 1736	.1685	÷	. 1666	.1361	.7679 .3141 .1115 .1358 .1245		0022				.4316	
163.000 174.000	au m		•								- non	.6783	6007	.4510	.5907
180,000	.8474				.2003			. 1543	. 1542	.1782	.5303		.6263		
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	.0506	.0197 .0238	.0083	0087	.0007		.1222				0405		0479	0470	
24.000 31.500 33.100 35.000	.0939 .0792 .0953	.0336	•	•.					•		• •	· · · .			
40.000 45.000 50.000	.1218	.0399 .0503								•	;				
51.600 57.000 60.900 65.000 68.000		.0538 .0538 .0535											0018		
00.000													0010		

				UPW	T 1059 C	IH4) 01-	T15-S8N1	6 ORBITE	ER FUSEL/	AGE.		(RQ39	ICAE		
MACH (1)	= 3.	700 AL	LEHA (2)	-	.000										
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 69.000 79.300 95.500 95.700		.0533			.0093 .0103		0060								
96.300 103.000 105.000 112.600	.0960				.0087							•			8400
117.500 120.800 127.900 129.500				e.		.1269		. 1861	. 1251			.0270		.0239	
130.000 135.000 139.600		0118			0056			. 1001	.1409 .0950	.0438		1020.			
144.000 155.000 180.000	.2018 .0979	0078			0077			٠				.0135			
X/LB	1.0250	1.0500									٠	. '			
PHI .000	047B	0450		•											
MACH (2)	= 4.	600 AL	PHA (1)	* -5	.000 PI	INF =	. 16570	Q(PS	() = 2.	1540	RN/L	= 3.000	O CP	STG =	1.8033
SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDEN	NT VARIA	BLE CP/C	PS							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	. 0800	.1000	. 1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI .000 !0.000 20.000 24.500	1.1162	. 4983	. 1645	. 1637		.1614	1177	.7432 .2053 .1250 .1313		.0339					
39.000 163.000 174.000 180.000	1.1162				.3055			.1235	.2433	.2811	.8087	1.0403	.9903	.6488	.8872
X/L9	.2000	.3000	.4000	.5000	.6000	.7800	8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
7/L8 149	.2000	. 5000	.7000	.5000	.0000	. 1004	9000	.0000	.0230	.0020	. 2200	, 2020			,,,,,,
53.000 .000	.0872	.0460 .0574	.0334	.0150	.0119		1276				0190		0275	0266	

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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAD)

PAGE 123

SECTION	LIORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIAB	LE CP/C	PS.							
X/LB	.2000	.3000	.4000	.5000	.6000	.7808	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
24.000	.0725														
31.500 33.100 35.000	.0578	.0695													
35.000	.0625	•												•	
40.000	.0820	.0739			-	•				• •		- 1			
45.000 50.000	.0963	.0787													
51.600	.0303						•						0168		
57.000		.0762			•										
60.900		.0545		•											
65.000 69.000		.0547				•							.0168		
69.000	**	.0462								-					
79.300		,			.0377								•		
95.500		0744	•	1. The state of	.0413		.0128								
95.700 96.300	.1211	.0314													
103.000	***				,0399	•			•						
105.000					****						,				0211
112.600 117.500		=		*	.0296							.0505		.0564	
120.800								•	.1903						
127.900						.0935								•	
129.500		*•						.2918	.2408	0000		.0367			
130.000 135.000	-	.0078			.0034				.2408	.0922		.0307			
139.600	. 4	.0070		•	.0057				.1792						
144.000										_		.0359	•		
155.000	.3058				0000										
180.000	.1679	.0095			.0096										
X/LB	1.0250	1.0500	•												
	100			•			ř		•				: .		
PHI												•.			

			İ	UPA	NT 1059 (1H4) O1-	T15-SBN16	ORBITE	R FUSELA	\GE	Y 1.00	(RQ3E	AD)		
MACH (2)) = 4.	600 A	LPHA (2)) =	.000 P	NF =	.16570	Q(PSI) = 2.4	540	RN/L	= 3.0000	CP	STG =	1.8033
SECTION (TIORBIT	ER FUSEL	AGE		DEPENDE	AIRAV TE	BLE CP/CF	PS	•						
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	. 1800	.1000	. 1250	. 1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000 10.000	.8865	.4191	.2004	.1383	,	.1628	. 429	.7001 .2078		.0129					
20.000 24.500								. 1212 . 1245					•		
39.000	9 19	•						.1102		• .				wee	
163.000 174.000												.6968	•	.4455	· · · · ·
180.000	.8865				. 1993			.1507	.1526	. 1773	.5055		.6722		.6569
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000 23.000	.0320	.0287 .0371	.0119	.0066	.0023	•	.0981			•	0205		0269	0257	
24.000 31.500	.0184 .0419														
33.100		.0478												•	
35.000 40.000	.0507 .0738	.0485		•			•						•	i	
45.000 50.000	.0867	.0485			-										
51.600	*0001					•			-	•			.0002		
57.000 60.900		.0582 .0581													
65.000 68.000		.0470		•			•		-	•			.0039		
69.000	•	8423.			0151										
79.300 95.500			*		.0151 .0163		0032				•				
95.700 96.300	.0895	.0328													
103.000					.0154									•	0248
105.000 112.600					.0104										-,0210
117.500 120.800		-							.1128			.0229		.0266	
127.900		•		•		.0752	÷	4707						•	
129.500 130.000			••		•			.1703	.1267	.6402	•	.0118	•		
135.000 139.600		0018			0042				.0712				•		
144.000	5000										•	.0066			
155.000 180.000	.2092	.0002			0091										

TABULATED SOURCE DATA - 1H4

PAGE 125

UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAD)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/L8 1.0250 1.0500

PHI

.000 -.0264 -.0261

UPWT 1059 (1H4) 01-T15-S8N16 OR8. UPPER WING

(RQ3UAD) (15 APR 76)

REFERENCE DATA

.0007

-.0249 -.0236

.0150

-.0233

.0313

-.0121

.0594

-.0001

.200

.600

.800

.900

.950

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. -5.000 .0000 INCHES RN/L = 3.000 BETA = LREF = 1290.3000 INCHES YMRP = .0000 INCHES BREF = 1290.3000 INCHES ZMRP = .0000 INCHES .0100 MACH (1) = 3.700ALPHA (1) = -5.000 PINF ≈ .32910 Q(PS1) = 3.1537RN/L = 3.0000 CPSTG = 1.7839SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM 4000 .6000 .8000 X/CM .1003 .050 .200 .0185 .0248 .0910 .600 -.0148 -.0313 .800 -.0311 .900 .0343 -.0125 .950 -.0139 CPSTG * 1.7839 MACH (1) = 3.700 ALPHA (2) = .32910 Q(PS1) = 3.1537RN/L = 3.0000 SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM .4000 .6000 .8000 X/CW .050 .0246 -.0196 -.0117 .200 .0272 .600 -.0429 -.0435 .800 ~.0434 .900 .0320 -.0285 .950 -.0294 MACH (2) = 4.600 CPSTG = 1.8033ALPHA (1) = -5.000 PINF = .16570 Q(PSI) = 2.4540RN/L = 3.0000SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM .4000 .6000 .8000 X/CM .050 .0529

TABULATED SOURCE DATA - IH4

PAGE 127

UPWT 1059 (IH4) 01-T15-S9N16 ORB. UPPER WING

(RQ3UAD)

Q(PSI) = 2.4540RN/L = 3.0000MACH (2 = 4.600 ALPHA (2) = .000 PINF = .16570

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

SANDM .4000 .6000 .8000

X/CW

.050 .200 .600 .800 .900 .0333

.0236 -.0132 -.0043 -.0279 -.0257 -.0237 .0338 -.0139

-.0105

				UPWI	. 1028 (11	i4) 01-1	r15-98N16	ORB.	LOWER H	ING			(RO3LA	0) (15	APR 76)
	REF	ERENCE DAT	A						".	- 1		PA	RAMETRIC	DATA	
REF = REF = CALE =	1290.300 1290.300	10 INCHES	YMRP =		1000 INCHE	S				• • • •	RN/L =	ı	3.000	BETA =	-5.000
ACH (1) = 3	.700 AL	.PHA (1)	- - 5.	000 PI	IF ≕	.32910	Q(PS	il) = 3	. 1537	RN/L	E.	3.0000	CPSTG	= 1:7839
SECTION	(1)ORB.	LOWER WIN	!G		DEPENDENT	VARIA	BLE CP/CP	5 .		• .		,		•	
Y/BW	.2500	3011	.3480	.4000	.5000	6000	.7500	.8500	9500	.99	80				
.001 .003 .003 .004 .005		.0625	.0173	.0115	.2810 .0317	.3635 .0674 .0279 .5813 .1284	.4130	.5182 .0710 .0572 .6595 .1046	•	.02	65				
.100	.0386	;		.0136		.0510		.0562	.0605						-
.200 200	.0340	1		.0176	.0210		OEEZ								
.428 .444		· · · · · ·	:	-0035	. 1857	.0538	, 020,								
.559 .600 .700				.2653		.1586				•		٠.			
.800 .850				n179	•	.1014	nu Ou		niai						
	REF =	REF = 2690.000 REF = 1290.300 CALE = .010 ACH (I) = 3 SECTION (1) ORB. Y/BM .2500 X/CM .000 .001 .002 .003 .004 .005 .025 .045 .100 .153 .0386 .177 .200 .299 .0340 .302 .428 .444 .0322 .467 .559 .600 .700	REF = 2690.0000 SQ.FT. REF = 1290.3000 INCHES REF = 1290.3000 INCHES CALE = .0100 ACH (I) = 3.700 AL SECTION (1) ORB. LOWER WIN Y/BW .2500 .3011 X/CW .000 .001 .0625 .002 .003 .004 .005 .025 .045 .177 .200 .299 .0340 .302 .428 .444 .0322 .428 .444 .0322 .428 .444 .0322 .428 .444 .0322 .428 .444 .0322 .428 .447 .559 .600 .700 .736 .4131 .800 .850	REF = 1290.3000 INCHES YMRP = 1290.3000 INCHES ZMRP =	REF = 2690.0000 SQ.FT. XMRP = .0 REF = 1290.3000 INCHES YMRP = .0 REF = 1290.3000 INCHES YMRP = .0 REF = 1290.3000 INCHES ZMRP = .0 CALE = .0100 ACH (I) = 3.700 ALPHA (I) = -5. SECTION (1)ORB. LOWER WING Y/BW .2500 .3011 .3480 .4000 X/CW .000 .001 .0625 .0173 .002 .003 .004 .005 .0158	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHE REF = 1290.3000 INCHES YMRP = .0000 INCHE REF = 1290.3000 INCHES ZMRP = .0000 INCHE REF = 1290.3000 INCHES YMRP = .0000 INCHE REF = 1290.3000 INCHES REF = 1290.3000 INCHES REF = 1290.3000 INCHES REF = 1290.3000 INCHES REF = .0000 INCHE REF = .000	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHE	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = .0000 .0000 INCHES REF = .0000 INCHES	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = .0000 IN	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1200.0000 INCHES ZMRP = .0000 INCHES REF = 1200.0000 INCHES REF = 1290.3000 INCHES REF = 1200.0000 INCHES REF	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = .00	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES REF = .0100	REF = 2690.0000 SQ.FT. XMRP = .0000 INCHES RRF = 1290.3000 INCHES YMRP = .0000 INCHES CALE = 0.0100 INCHES ZMRP = .0000 INCHES	REF = 2690.0000 SO.FT. XMRP = .0000 INCHES REF = 1290.3000 INCHES YMRP = .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES .0000 INCHES REF = 1290.3000 INCHES ZMRP = .0000 INCHES .00000 INCHES .0000 INCHES .0000 INCHES .00000 INCHES .0000 INCHES .00000 INCHES .0000 INCHES	REF = 2690.0000 SO.FT. XMRP = .0000 INCHES RRF = 1290.3000 INCHES YMRP = .0000 INCHES CALE = .0100 INCHES YMRP = .0000 INCHES CALE = .0100 INCHES XMRP = .0000 INCHES XMRP = .0000 INCHES CALE = .0100 INCHES XMRP = .0000 XMRP = .32910 Q(P51) = 3.1537 RN/L = 3.0000 CPST6 XMRP = .0000

MACH (1)	= 3.	700 AL	PHA (2) =	.000 P	INF =	.32910	Q(P5)	1) = 3.	1537
SECTION (1)ORB.	LOWER WIN	iG .		DEPENDEN	T VARIA	BLE CP/CF	°S		
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH .000 .001 .003 .003 .004		.0267	.0096		.2549	.3657 .0832 .0399 .4692 .1418	.4300	.4955 .1161 .0902 .5256 .1779		.0062

MACH (1)	= 7	700 AL	S) AHG.		C 1059 (1 .000	H4) 01-	T15-58N16	5 ORB. L	OMER WI	NG		(RQ3LAD)	
		-		-		T VANTA							
SECTION (IIUNB.	LUMER MIR	NG.		DEPENDEN	II VARIA	3LE C7/C1	-5					
SA\BM	.2500	.3011	.3480	.4006	.5000	.6000	7500	.8500	.9500	.9980	٠		
X/CM													
.025				.0206	.0437		0988	•					
.045 .100				.0197		.0418		.0922	.1023				• •
. 153	.0050				0000						1		
.177 .200		•		0027	.0098					•		1.0	
. 299	0022												•
.302 .428				.0146	•	.0478	. 0714						
.444	0022								•			•	
.487 .559				. 1715	. 1622					•			
.600				.1715		.1312							
.700						.1036							
.736 .800	.3199			•		.0797						•	
.850						.0631							
.900			**	0048		.0442	.0446		.0043				
MACH (2)	= . 4,	JA 000	_PHA (1) = -5	.000 PI	NF =	.16570	Q(PS)) = 2.	4540	RN/L = 3	.0000 CF	PSTG = 1.8033 ·
•) = -5) = 2.	4540	RN/L = 3	.0000 CF	PSTG = 1.8033
SECTION (110RB.	LOWER WIT	NG .		DEPENDEN	T VARIA	BLE CP/C	? S			RN/L ≖ 3	5.0000 CF	PSTG = 1.8033
•				.4000					.9500	.9980	RN/L = 3	s.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW	110RB.	LOWER WIT	NG .		DEPENDEN	T VARIA	BLE CP/C	.8500		.9980	RN/L ≖ 3	3.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000	110RB.	LOWER WIT	.3480		DEPENDEN	T VARIA	3LE CP/C	.8500 .5697			RN/L = 3	0000 CP	STG = 1.8033
SECTION (2Y/BW X/CW	110RB.	LOWER WIT	NG .		DEPENDEN	.6000 .4115 .0934 .0478	BLE CP/C	.8500 .5597 .1117 .0804		.9980	RN/L = 3	0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003	110RB.	LOWER WIT	.3480		DEPENDEN	.6000 .4115 .0934 .0478 .6005	3LE CP/C	.8500 .5697 .1117 .0804 .6803		.9980	RN/L = 3	.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003	110RB.	LOWER WIT	.3480		DEPENDEN	.6000 .4115 .0934 .0478 .6005	3LE CP/C	.8500 .5697 .1117 .0804 .803 .1632		.9980	RN/L ≖ 3	.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005	110RB.	LOWER WIT	.3480	.4000	DEPENDEN	.6000 .4115 .0934 .0478 .6005	3LE CP/C	.8500 .5697 .1117 .0804 .6803		.9980	RN/L = 3	3.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025	110RB.	LOWER WIT	.3480	.4000	DEPENDEN .5000	.6000 .4115 .0934 .0478 .6005 .1586	3LE CP/CI .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	3.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .108	110RB.	LOWER WIT	.3480	.4000	.5000 .3051 .0633	.6000 .4115 .0934 .0478 .6005	3LE CP/CI .7500 .4628	.8500 .5697 .1117 .0804 .803 .1632		.9980	RN/L = 3	0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .100 .153	110RB.	LOWER WIT	.3480	.4000 .0350 .0331	DEPENDEN .5000	.6000 .4115 .0934 .0478 .6005 .1586	3LE CP/CI .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	5.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .100 .153 .177	.0390	LOWER WIT	.3480	.4000	.5000 .3051 .0633	.6000 .4115 .0934 .0478 .6005 .1586	3LE CP/CI .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .177 .200 .299 .302	110RB.	LOWER WIT	.3480	.4000 .0350 .0331	.5000 .3051 .0633	.4115 .0934 .0934 .0478 .6005 .1586 .0647	3LE CP/CI .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .046 .100 .153 .177 .200 .299 .302 .428	.0390 .0233	LOWER WIT	.3480	.4000 .0350 .0331	.5000 .3051 .0633	.6000 .4115 .0934 .0478 .6005 .1586	.7500 .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	CF	STG = 1.8033
SECTION (2Y/BH X/CH .000 .001 .002 .003 .004 .005 .025 .046 .100 .153 .177 .200 .299 .302 .428 .484	.0390	LOWER WIT	.3480	.0350 .0331 .0297	.5000 .3051 .0633	.4115 .0934 .0934 .0478 .6005 .1586 .0647	.7500 .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	5.0000 CF	STG = 1.8033
SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .100 .153 .177 .200 .299 .302 .428	.0390 .0233	LOWER WIT	.3480	.4000 .0350 .0331	.5000 .3051 .0633	.4115 .0934 .0934 .0478 .6005 .1586 .0647	.7500 .7500 .4628	.8500 .5697 .1117 .0804 .8633 .1632 .0865	9500	.9980	RN/L = 3	5.0000 CF	STG = 1.8033

UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING

(RO3LAD)

				T 1059 ()	(H4) 01-	715-S9N1	6 ORB. I	LOWER WII	VG		(RQ	3LAD)			
MACH (2)	1 = 4.6	600 ALPHA (1)	= -5	.000											
SECTION (I)ORB.	LOWER WING		DEPENDEN	IT VARTA	BLE CP/Ci	PS							•	
5A/8M	.2500	.3011 .3480	.4000	.5000	.6000	. 7500	.8500	.9500	.9980					÷	
X/CW .700 .736	.3302				.0760										
.009. 079. 009.	,		.0210		.0523 .0417 .0332	. 3405		.0011					. '		
MACH (2)	= 4.6	300 ALPHA (2)		.000 PI	NF =	. 16570	QIPS	i) = 2.1	÷540	RN/L	= 3.00	00	CPSTG	=	1.8033
SECTION (DORB. L	LOWER WING		DEPENDEN	•	BLE CP/C	PS .								
SA\BM	.2500	.3011 .3480	4000	.5000	.6000	. 7500	.8500	.9500	.9980						
.000 .001 .002 .003		.0382 .0239	•	.2498	. 3944 . 0974 . 0525 . 5147 . 1632	. +750	.5475 .1350 .1003 .5676 .1840		.0055		-				
.005 .025 .045 .100			.0301	.0606	.0698	.1146	. 1037	. 1073							
.153 .177 .200 .299	.0235		.0266	.0313											
.302 .428 .444	.0133		.0296		.0563	.0753					,				
.487 .559 .600 .700	41.49		.0797	.1020	.0830 .0693						:				•
.736 .800 .850 .900	.1417		.0474	•	.0589 .0511 .0426	.0220		.0130							

	DATE 20 APR 76	TABULATED SOURCE	DATA - IH4						P	AGE 131
		UPWI	(1H4) e201	01-T15-S8N16	ORB. VERT.	TAIL		(RQ3VA	נסו נסו	APR 76)
	REFERENCE DA	TA						PARAMETRIC	DATA	
	SREF = 2690.0000 SQ.FT. LREF = 1290.3000 INCHES BREF = 1290.3000 INCHES SCALE = .0100	YMRP = .0	0000 INCHES 0000 INCHES 0000 INCHES				RN/L =	3.000	BETA =	-5.000
:	MACH (1) = 3.700 A	LPHA (1) = -5.	000 PINF	= .38910	Q(PSI) =	3.1537	RN/L	3.0000	CPSTG	= 1.7839
	SECTION (1) ORB. VERT. TA	IL	DEPENDENT V	ARIABLE CP/CP5						
	Z/BV .2990 .5320	.7650 .9050				- **		•		
	X/CV .000 .4266 .5432 .300 .2658 .2653 .500 .2379 .700 .0670 .900 .0429 .0485	.5640 .6660 .1626								
	MACH (1) = 3.700 A	LPHA (2) = .	7/19 000	= .32910	Q(PSI) =	3.1537	RN/L	= 3.0000	CPSTG	= 1.7839
	SECTION (110RB. VERT. TA	IL	DEPENDENT V	ARIABLE CP/CPS						
	Z/BV .2990 .5320	.7650 .9050								
	X/CV .000 .3772 .3887 .300 .1603 .1282 .500 .1393 .700 .0309 .900 .0022 .0176	.3960 .3648 .1118								
	MACH (2) = 4.600 A	LPHA (1) = -5.	000 PINF	= .16570	Q(PSI) =	2.4540	RN/L	3.0000	CPSTG	= 1.8033
	SECTION (1)ORB. VERT. TA	1L	DEPENDENT V	ARIABLE CP/CPS				1		
	Z/BV .2990 .5320	.7650 .9050								•
	X/CV .000 .4015 .4011 .300 .1671 .1211 .500 .1520 .700 .0633 .900 .0215 .0496	.4474 .5319 .0921					-		•	

TABULATED SOURCE DATA - IH4

PAGE 132

UPWT 1059 (IH4) 01-T15-58NIG ORB. VERT. TAIL

(RQ3VAD)

CPSTG = 1.8033 RN/L = 3.0008 ALPHA (2) = Q(PSI) = 2.4540MACH (L) = 4.600 .000 PINF = .16570

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

.9050 Z/BV .2990 .5320 . 7650

X/CV

.000 .300 .500

.3836 .4195 .1006 .1027 .3022 .0787

.0346 .900 .0150

TABULATED SOURCE DATA - 1H4

PAGE 133 (15 APR 76) UPWT 1059 (1H4) 01-T15-98N16 EXTERNAL TANK

		REFER	ENCE DAT	Α.									PARAMETR	IC DATA		
-	LREF = 1	690.0000 290.3000 290.3000 .0100	INCHES	* 17 17 17	= .(0000 INC	HES				RN	I/L *	3.000	BETA		-5.000
	MACH (1)	= 3.7	00 AL	PHA (1)) = -5	.000 P	INF =	.32910	QtPS	1) = 3.	1537	RN/L	= 3.000	o CPS	STG · =	1.7839
	SECTION (DEXTERN	AL TANK			DEPENDE	NT VARIA	BLE CP/C	PS					:		
	X/LT	.0000	.0050	0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
	THETA .000 45,000 67,500 90.000 112,500 135,000				. 1951	.0903	0022	.0244	.0062	.0228 .0369	0157 .2599 .0495	.6043 .0455 .0610		0387 .0174 .1250 .0562	.0364	0169 0405 0454 0131 0650 .0428
:	167.000 180.000 197.000 210.000 220.000 225.000	.9645	.8356	.7979	.5333	.3522 .3310	.1453 .1442 .1134	.0613	.0356		.0390 .0414		.0783	.0615	.0780	.1063
	X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
	THETA .000 45.000 67.500 90.000 112.500 123.000		0112 .0383		0459 0064 .0380		.0043 .0733		0284 0395 0364 .0503 .0908	0426 .1216 .0705	0417 .0318 .1044	0382 .0274 .0838 .0685	0236 0373 0345 .0187 .0658	.0085 .0979 .1214 .1257	.1160	0186 0157 .0916 .1453 .1319 .1332
	157.500 161.000 166.000 180.000 197.000 210.000 220.000	.1578 .2190 .2846	.2756	.0667	.1367 .0701 .0592 .0766 .6733	. 0444	.0793	.0598	.092	.0338	.0450 .0373 .0301 .0430	.0269	.0561 .0600 .0216	.1081	•	.1739 .1897
	X/LT	.9250	.9350	.9370	.9750		•						٠			
	THETA 123.000	.2033														

UPWT 1059 (IH4) O1-T15-S3N16 EXTERNAL TANK

(RQ3TAD)

-.0018

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (I)EXTERNAL TANK

DEPENDENT VARIABLE CO/CPS

X/LT .9250 .9350 .9370 .9750 THETA 151.000 .2774 180.000 .2598 -.0252

210.000 .3102 = 1.7839 MACH ([) ≃ 3.700 ALPHA (2) = PINF .32910 Q(PSI) = 3.1537RN/L 3.0000 CPSTG .000 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 X/LT .0000 .0050 .2750 .3000 .3250 .3350 .3500 .0100 .0400 .0800 .1500 .2000 .2500 THETA .0065 .000 .3410 .2010 .0503 45.000 .0270 67.500 .0163 .0179 -.0167 90.000 .5866 .0295 -.0054 .0221 .0040 .0193 .2261 112.500 .0882 .0324 -.0110 .0120 .0152 135.000 .0120 .0104 .0051 .0343 .0294 157,500 167.000 .0359 180.005 9770 .6754 .7200 .3403 .2065 .0572 .0034 -.0018 .0016 .0119 .0236 .0479 197.000 .1975 .0560 .0012 210.000 .0469 .0449 220,000 .0476 225.000 .01.52 232.000 .0785 .8750 .9000 X/LT . .4250 .8500 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 THETA ,000 -.0092 -.0091 45.000 -.0191 -.0035 .0092 67,500 -.0282 .0033 .0030 -.0064 -.0069 .0210 -.0046 90.000 -.0285 -.0047 -.0333 . -.0199 .0019 .0060 .0468 .0081 .0052 .0404 112.500 -.0247 -.0231 .0201 -.0105.0023 .0428 .0403 .0377 .0333 .1288 .0222 123.000 .0157 .0219 135,000 .0032 .0147 .0276 .0194 .0143 .0:54 .0162 ,0565 .1377 157.500 .0273 .0651 .1029 .1084 .0466 .0657 .0177 .0050 .0029 .0234 .0355 . 1255 161,000 .0847 166.000 .0545 .0019 180.000 .1769 .2137 .0346 .0325 .0877 .0102 .0291 .0321 .0186 -.0003 .0030 -.0042 .0187 .0465 197.000 .1021 .0541 .0066 210,000 .0076 .0179 220.000 .6272 .0051

-.0071

PAGE 135

.0064

UPWT 1059 (1H4) 01-TIE-SBN16 EXTERNAL TANK (ROSTAD) MACH (1) =3.700 ALPHA (2) = .000 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA .1566 123.000 151.000 .2470 180.000 -.0342 .1603 210.000 .1876 **= 1.8033** 3.0000 CPSTG MACH(2) =4.500 ALPHA (1) = -5.000 2.4540 . 13570 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .3000 . 3250 .3350 .3500 .3750 .4000 .0000 .0050 .0800 .2500 .2750 .0100 .0400 .1500 . 2000 THETA -.0072 .000 .2548 .1367 .0232 -.0055 45.000 -.0153 .0024 67.500 .0123 .4975 .0419 .0078 . 0236 .0078 .0221 .1879 90.000 112.500 .0231 .0327 .0259 .0779 .0306 .0334 .0174 .0211 135.000 .0330 157.500 .058B .0505 167.000 .0181 .0282 .0352 . 0640 180,000 .9665 .7193 .8130 .4234 .2639 .0915 .3307 .0142 .0199 197.000 .2477 .0901 .0413 210.000 .0721 .0417 220.000 225.000 .0553 232,000 .0920 .8750 .9000 .0000 .8500 X/LT .7000 .7500 .4250 .4500 .5000 .5250 .5500 .6000 .6500 THETA -.0083 .000 -.0152 -.0136 45.000 -.0224 -.0245 .0143 -.0180 -.0104 -.0135 67.500 -.0225 -.0124 -.0182 -.0071 .0232 .0217 .0166 .0186 90.000 -.0143 -.0129 .0071 .0244 .0386 .0085 .0194 .0426 .0708 .0648 .0559 .0535 112.500 .0089 .0238 .0420 .0327 .0620 123.000 .0370 .0669 .0726 135.000 .0439 .0745 .0500 .0443 .0370 .0342 .0419 .1235 .0220 .0445 157.500 .0723 .1051 .0881 .1266 .0588 .0560 .0388 .0267 .0189 161.000 .1174 .0256 166.000 .0688 .0578 .0989 180.000 .2082 .2707 .0666 .0465 .0325 .0470 .0522 .0306 .0235 .0174 .0089 .0169 .1166 197.000 .0518 .0195 .0056 210.000 .0095 .0194 .4264 220.000

.0113

. 232.000

UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK

S EXTERNAL TANK (RGSTAD)

.0014

4.600 ALPHA (1) = -5.000SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .1401 151.000 .2137 180.000 .1518 -.0187 210.000 .1872 CPSTG = 1.8033 Q(PSI) = 2.4540RN/L 3.0000 MACH (2) = 4.600 ALPHA(2) =.000 PINE = .16570 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3500 .3750 .4000 .3250 .3350 X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 THETA .0089 .000 .3378 .1997 .0556 45.000 ,0235 .6229 .0338 -.0013 67.500 .4527 .0440 .0113 .0222 90.000 .0270 .0089 .1833 .0341 .0419 .0021 112.500 .0147 .0188 .0041 .0300 135.000 .0137 .0154 .0598 157.500 167.000 .0324 .0097 .0118 .0158 .0358 180.000 .6686 .6814 .3307 .2001 .0553 .0098 .0097 .9756 1895 197,000 .0544 .0101 .0306 210.000 .0443 .0402 220.000 .0337 225.000 .0978 232.000 .8750 .9000 X/LT .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500. .8000 .8500 THETA -.0072 -.0076 .000 45.000 -.0096 -.0041 .0111 67.500 -.0167 .0013 .0006 -.0039 .0194. -.0036 -.0008 .0108 .0293 -.0105 -.0126 .0078 90.000 -.0177.0006 .0053 .0114 .0407 -.0109 .0055 .0138 .0248 .0370 112.500 -.0112 -.0102 .0038 .0319 123.000 .0290 .0302 .0591 ,0581 135.000 .0126 .0096 .0062 .0312 .0220 .0192 .0164 .0127 .0416 .0972 157.500 .0254 .0502 .0707 .1122 .0572 .0235 .0111 .0020 .0055 .0190 .0300 161.000 .0411 166.000 .0559 -.0007 .0328 .0289 .0231 .0079 -.0022 -.0041 .0020 .0302 .0657 180.000 . 1248 .2442 .0446 .0132 .0158 .0839 197,000 .0459 .0008 210.000 -.0006 .0006 .3973 220.000 -.0007

-.0129

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 UPWT 1059 (1H4) 01-T15-38N16 EXTERNAL TANK (RQ3TAD) MACH (2) = 4.600ALPHA (2) = .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 151.000 180.000 210.000 .1182 .1108

.1303 -.0247 .1348

PAGE 137

			•	UPA	T 1059 (IH4) O1-	T15-98N1	6 SOLID	RCKT. B	STR.		(RQ3	SAD) (15 APR	76 1
	REFE	RENCE DA	TA -									PARAMETR	IC DATA	••	
LREF = 1	0000.0000 1290.3000 0000.000	INCHES	YMRP	٠.	0000 INC 0000 INC 0000 INC	1ES				AN.	I/L =	3.000	BETA	-	-5.000
MACH ([]) = 3.	700 A	LPHA (1) = - 5	.000 P	INF =	.32910	QCPS	1) = 3.	1537	RNZL	= 3.0000) CP	STG =	1.7839
SECTION ((1)50LID	RCKT. B	STR		DEPENDEN	NT VARIA	BLE CP/C	PS .							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4800	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	1.3401		. 1573	. 1521 . 3278		. 1577 . 2836		0200		. 1897	.0786	.0301	0145 .1081 .1350	.0901	.0781 .0723
270.000 315.000		.3217	.2030	.1327	.0947	.2285	1.0531	.9290	.0036	0154	0109	0059 0392	.0377	.0291	.6129
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900			
PSI 90.000 180.000 210.000 215.000 225.000	0321	.0182 .2573	0374 .2616	.0880	.0794	.3511	.0792	.0030 .1410 .1369	0053	.0544	.1211 0313 0190	.0022			
240.000 247.500 270.000 315.000	.0416 .0009 ~.0348	.3201	0275	0408				.0090			0080	0201			
MACH (1)	i = 3.	700 A	LPHA (2) ==	.000 PI	INF =	.32910	QIPS	1) = 3.	1537	RN/L	= 3.0000) CP	STG =	1.7839
SECTION (1)50L1D	RCKT. B	STR		DEPENDEN	NT VARIA	BLE CP/CI	-S							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	1.3905		. 1649	.1690 .1739		.1721		.7212		.0438	:0093	0229	.0098 0069 0156 .0219	.0359	.0384
270.000 315.000		. 3323	.2167	.1371	. 1240	. 1754	.9903		.0062	.0155	0143	0305 0276	.0049	0051	0014

**															
				UPW	T 1059 ([H4) 01-	T15-57NI	6 SOLID	RCKT. BS	STR.		(RQ3	SAD)		
MACH (1)	= 3.	700 A	LPHA (2) =	.000										
SECTION (DSOLID	RCKT. B	ISTR		DEPENDE	NT VARIA	BLE CINC	PS	,						
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 240.000 247.500 270.000 315.000	.0133 .0237 .0211 0069 0122	.1260 .1603 .1618	0063 .1366 .1457 0302	.0605	.0422	.2469	. 04.57	.0492 .1257 .0660 .0444 0026	0118	.0432	.0946 0336 .0122 0154	.0809 .0610 0219			
MACH (2)	= 4.6	500 · A	LPHA (1) = -5	.000 PI	NF =	.16570	QIPS	1) = 2.4	1 540	RN/L	= 3.000	O CPS	STG =	1.8033
SECTION (1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSRB	.0000	. 0040	.0250	.0500	.0750	.1000	.1100	.1150	. 1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.500	1.5929		.1635	.1638 .2588		.1677 .2078				.0581	.0259	.0012	.0029 .0143 .0294 .0331	.0606	. 0593 . 0596
260.000 270.000 315.000		.3803	.2371	. 1462	.0929	. 1878	.7721	.8331	.0242	.0163	.0024	0136 0233	0022	.0153	.0133
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000	0044 .0371	.0760 .1720	0110 .1104	.0786	.0708	2867	.0591	.0232 .1433 .0533	0033	.0308	.0763 0144 .0038	.0432 .0375			
240.000 240.500 247.500 270.000 315.000	.0415 .0102 0055	.1843	.0653	0240	,			.0656 0052 0235		•	0058	0078 .0324			

DETICINAL STATEMENT TO STATEMEN

UPWT 1059 (IH4) 01-T15-SEN1B SOLID RCKT. BSTR.

(RQ3SAD)

				OFF	11 1008	CIU41 OI-	11.0-26141	0 20710	, HCKI. D	DIK.		mus	יטאטי	•	
MACH (2)	: = 4. {	600 A	LPHA (a	2) =	.000	PINF =	.16570	Q(PS	SI) = 2.	4540	RN/L	= 3,000	O CF	STG =	1.8033
SECTION (1)SOLID	RCKT. B	STR	•	DEPEND	ENT VARIA	BLE CF/C	:PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	1.6355		. 1667	. 1687 . 1833	-	1726 . 1418		.9263		.0443	.0089	0134	.0123 0001 .0023 .0073	.0223	.0286 .0370
270.000 315.000		.3902	.2485	.1519	.1144	.1592	. 5201.		.0167	.0246	.0038	0151 0158	0034	0011	.0013
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900	•		
PSI 90.000 180.000 210.000 215.000 225.000	.0195 .0276	.0909 .1656	0043 .0984 .1280	.0674	.0486	.2598	.0415	.0634 .1369 .0671	0063	.0582	.0795 0155 .0147				
240.000 247,500 270.000 315.000	.0323 .0063 0014	.2139	0106	0229				0057 0208			0109	.0328			

TABULATED SOURCE DATA - IH4

				UPW.	T 1059 (1	(H4) O1-	T15-S81116	ORBITE	R FUSEL	AGE		(RQ3E	BAE) (15 APR	76)
	REFE	RENCE DA	TΑ				÷					PARAMETR:	C DATA		-
LREF =	0000.0689 0002.0891 0002.0891	INCHES	XMRP : YMRP : ZMRP :	• .1	0000 INCH 1000 INCH	ÆS				RN	1/L =	3.000	BETA		5.000
MACH (1) = 3.	700 A1	_PHA (1	= -5	.000 PI	INF =	.32925	Q(PS)	() = 3.	1551	RN, L	= 3.0000	3 CF	este =	1.7839
SECTION	(DORBITI	ER FUSEL	AGE		DEPENDEN	NT VÄRIA	BLE CP/CF	'S							
X\rB	.0000	.0050	.0200	.0400	.0500	.0600	.080.	.1000	.1520	.1500	.1600	.1650	1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	1.2615	.5356	.1947	. 1878	.4098	.1823	.1135	.7890 .5421 .1117 .0593 .0921	.3380	.0317	.8677	.9352	.9860	.4945	.9206
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 35.000 45.000 57.000 65.000 69.000 69.300 95.500 95.700	.1418 .0904 .0743 .0708 .0590	.0429 .0279 .0288 .0314 .0334 .0296 .0295 .0291 .0200	.0675	.0285	.0337 .0176 .0294		.0159				0225		.0410	0396	
95.700 96.300 103.000 105.000 112.600 117.500 129.800 127.900	.0300	0114			.0163 .0159	.2108		.2092	.0552			.0099		.0099	0298

UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE

(ROJBAE)

MACH ()	= 3.	700 At	LPHA (1)	= -5	.000									•	•
SECTION (IT VARIA	BLE CP/CF	·S							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.£000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 130.000 135.000 139.600 144.000 155.000 180.000	.2081 .1649	0036	·		.0153				. 138! . 2242	.0251		0013			
X/LB	1.0250	1.0500									-				
149 000.	0440	0390													
MACH (1)	= 3.	700 AL	_PHA (2)	=	.000 PI	NF =	.32925	Q(PSI) = 3.1	1551	RN/L	= 3.0000	CP	STG =	1.7839
SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDEN	IT VARIA	BLE CP/CF	s							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	. 1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	.8945	.4005	. 1364	.0840		.1470	.3174	.8044 .4710 .2654 .1559 .0476		0078		.5514	,	.2748	
180.000	.8945				.2041			. 1572	. 1556	.1738	.5042		.6087		.5821 1.0145
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500	.0265 0141 0109	.0188 0049	.0182	.0028	.0054		.1593		, •	. '	0300		0423	0438	
33.100 35.000 40.000 45.000 50.000	0115 0115	0072 0031 .0018										•	0052	•	
51.600 57.000 60.900 65.000 68.000		0136 0139 0139						•				÷.	0241		

OS STAD	APR 76		TABULATE	D SOURCE	E DATA -	IH4								PAGE	143
				UPW	T 1059 (IH43 01-	T15-38N1	ORBITE	ER FUSELA	AGE		(RQ3E	PAE)	:	
MACH (1) = 3.	700 AL	.PHA (2)	t ==	.000										
SECTION	(1)ORBIT	ER FUSELA	AGE		DEPENDEN	NT VARIA	BLE SP/CI	P S			* .				
X/LB	.2000	.3000	.4000	.5000	6000	.7800	.8 ,00	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 69.000 79.300 95.500 95.700 103.000 12.600 12.600 127.500 139.600 139.600 144.000 156.000	.0316	0140 0116 0285			0172 0135 0118 0123 0126	.0977	0.29	.1412	.0235 .0974 .1464	.0160		0223 0149 .0070		0238	0382
X/LB	1.0250	1.0500	**************************************												
PHI .000	0434	0413				r	•							·	•
MACH (2) = 4. (1)ORBIT		LPHA (1) AGE	* - 5		INF = NT VARIA	.16570 BLE CP/CI		() = 2. ^L	1540	RN/L	× 3.0000) CPS	STG ×	1.8033
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000		.5201	.1790	. 1553		.1525	.0948	.6531 .3923 .0916 .0525		.0425				.4194	
174 -000 180 -000			: •	•	.3095	4		.2463	.2434	.2721	.7647	.8388	.8838	.1121	.8473
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.6620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	.0632	.0410 .0215	.0350	.0293	.0192		. 1586				0128		0253	0255	

UPWT 1059 (1H4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAE)

SECTION (DORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/C	PS .							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI															
24.000	.0580	•			÷ *					:		•	-		
31.500	.0473				•									•	• •
33.100		.0149						•		. •				,	
35.000	.0433	0170													
40.000 45.000	.0363	.0130 .0145	1000									· · ·			
50.000	.0344	.0170	*												•
51.600	.0511				•								0015		
57.000		.0117		1											•
60.900		.0115													
65.000		.0117					-							•	
68.000	1.		•							•			0072		
69.000 79.300	. :	.0040			0001										
95.500					0001 0001		.0016						•		
95.700		0065			0001		-0010								
96.300	.0343	. 0005	•				•		_						
103.000					0086										
105.000							•								0249
112.600					0095										
117.500												.0029		.0012	
120.800									.0490						
127.900						.0828		1007					•		•
129.500 130.000								.1807	.1264	.0377		.0030	•	-	
135.000		0087			0051				• 1504	.0377		.0000		•	
139.600					.0031				.1805						
144.000												.0264	•		
155.000	. 1708										1				
180.000	. 1653	.0116			.0141										
														•	
X/LB	1.0250	1.0500	1.5				•	•			٠.			·	
PHI			•		•					the state					,
rm		0000									_	4.0			

					UPW	IT 1059 ()	H41 01-	T15-SHN16	ORBITE	R FUSELA	\GE		(RQ3	BAE)		
	MACH (2)	= 4 .	600 AL	_PHA (2)	=	.000 PI	NF =	.16570	Q(PS)) = 2.4	·540	RN/L	= 3.000	O CP	STG =	1.8033
	SECTION (IJÖRBIT	ER FUSELA	AGE		DEPENDEN	IT VARIA	BLE CIVE	°S					7 1 1	•	•
	X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	.1600	.1650	.1700	.1750	.1800
	PHI															
	.000 10.000	.9458	.4386	.1476	.1029		. 1571	.2123	.7957 .3943		,0127					
	20.000	-							1389			:				·.
	24.500 39.000								.0920 .0485						• • •	
	163.000 174.000												.5603	•	.2767	
٠.	180.000	.9458				.2048			.1544	. 1531	.1719	.4962		.6502		.6429
	X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	PHI	:-			-							4.2	• .		2	
	.000 23.000	.0186	.0275 .0053	.0123	.0150	.0049		.1106				0145		0241	0249	
	24.000 31.500	0006 .0017														
	33.100		.0024			•							٠.			
	35.000 40.000	0009 0072	.0035					•								
	45.000 50.000	.0216	.0046				• . • •	•								
	51.600	.0210							•				•	0108		
	57.000 60.900		0032 0034													
٠.	65.000 68.000	*/	0032			. •							•	0135		
	69.000		0034									* .		0133		
	79.300 95.500	*.				0091 0079		0093								
	95.700 96.300	.0261	0032										• 3	• •		
	103.000	. uco1			• .	0085								•		
	105.000 112.600	•	•			0109										0242
	117.500 120.800	-		· 1.						.0215			0109		0126	
	127.900	•					.0145			.0513						
	129.500 130.000								,0747	.0827	.0187	• .	0066			
	135.000 139.600	4, 1	0141			0120				1240						
	144.000									. 1570			.0115			
	155.000 180.000	.1062 .1170	.0023			0113										

TABULATED SOURCE DATA - IH4

PAGE 146

UPWT 1059 (1H4) 01-T15-SENIG ORBITER FUSELAGE

(RQ3BAE)

MACH (2) = 4.600

.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB

1.0250 1.0500

PHI .000 -.0266 -.0259

TABULATED SOURCE DATA - 1H4

PAGE 147

			UPWT 1059 (1H4)	01-T15-S8N16	ORB, UPPER WING	÷.	(ROZUA	(15 APR 7	6.)
	REFERENCE DA	TA					PARAMETRIC	DATA	
LREF = 1	8690.0000 SQ.FT. 290.3000 INCHES 290.3000 INCHES .0100	XMRP = YMRP = ZMRP =	.0000 INCHES .0000 INCHES .0000 INCHES			RN/L ≖	3.000	BETA = 5	.000
MACH (1)	= 3.700 A	LPHA (1) =	-5.000 PINF	= .32925	Q(PSI) = 3.1551	RN/L :	3.0000	CPSTG = 1	.7839
SECTION (DORB. UPPER WI	NG	DEPENDENT V	ARIABLE CP/CPS			•		
X/CM 24/8M	.4000 .6000	.8000							
.050 .200 .600	.2287 .0618 .0965 01540116	. 1953							
.800 .900 .950	0195 .0596 0030	.0079			• •				
MACH (1)	= 3.700 A	LPHA (2) =	.000 PINF	= .32925	Q(PSI) =- 3.1551	RN/L	3,0000	CPSTG = 1	.7839
SECTION (110RB. UPPER WI	NG	DEPENDENT V	ARIABLE CP/CPS		• • • •			
2Y/BW	.4000 .6000	.6300		•		•	•	•	
X/CW .050 .200 .500 .800 .900	.1273 .0136 .0376 03350301 0303 .0647 0179	.0983							
MACH (2)	= 4.600 A	LPHA ([) =	-5.000 PINF	= .1657C	Q(PSI) = 2.4540	RN/L	= 3.0000	CPSTG = 1	.8033
SECTION (110RB. UPPER WI	NG	DEPENDENT V	ARIABLE CP/CPS				•	
X/CH .050 .200	.1580 .0453 .0737	.8000 .1559							
.600 .800 .900 .950	01100038 0102 .0530 .0031	.0173							

TABULATED SOURCE DATA - 1H4

PAGE 198

UPWT 1059 (1H4) 01-T15-S8N16 ORB, UPPER WING

(ROBUAE)

MACH (2) 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540RN/L = 3.0000CPSTG = 1.8033

SECTION (1) ORB. UPPER WING .4000

DEPENDENT VARIABLE CP/CPS

SANBM X/CM

.1158 .0095 .0389 .1084 -.0189 -.0164 -.0161 .050 .200 .600 .800 .900 .0544 -.0007 .0034

PAGE 149

UPWT 1059 (1H4) 01-T15-SENIG ORB. LOWER WING

(RQ3LAE) (15 APR 76)

	REFE	RENCE DA	TA									PA	RAMETRIC	DATA		
LREF = 12	0000.000 0008.009 0008.009 0010.	INCHES		= .	0000 IN 0000 IN 0000 IN	CHES	,			R	N/L =		3.000	BETA	=	5.000
MACH (1)	= 3.	700 AI	LPHA (1) = -5	.000	PINF =	.32925	QCPSI) = 3.	1551	RN/L	=	3.0000	CP:	STG =	1.7839
SECTION (130RB. 1	OWER WIN	NG		DEPENDI	ENT VARIA	BLE CP/CF	's								·
SANOM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980	•				٠.	
.000 .001 .003 .003		.0319	.0288		. 1820	.3142 .0593 .0164 .4370	.2524	.2693 .0301 .0170 .3785		0127	,		•	-		
.005 .025				.0700	.0322	.0328	.0299	.0175								
.045 .100				.0717		.0121		.0150	.0095							
. 153 . 177 . 200 . 299	.0209			.0395	.0345				•							
.302 .428	.0003			.0750		1295	.0555									
.444 .487 .559 .600	.0351			.1858	. 1399					٠.					,	
.700 .736 .800 .850 .900	.2200			.0109		.0483 .0356 .0207	.0166		007!	•						
MACH (1)	= 3.	700 AI	LPHA (2) =	.000	PINF =	.32925	Q(PS)) = 3.	. 1551	RN/L	*	3.0000	CP	STG =	1.7839
SECTION (DORB.	LOWER WIN	NG	r	DEPEND	ENT VARIA	BLE CP/C	PS	•							
SANBM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980	1					
X/CH .000 .001 .002 .003 .004 .005		.0038	0112		.0911	.1603 .0196 .0067 .2295 .0502	.1749	.2079 .0303 .0235 .2489 .0502 .0232		0219	1					

(ROSLAE)

				UPW	IT 1059 (IH4) 01-	TIS-SBNI	orb.	LOWER WI	NG		(RQ3LAE)	
MACH: (1)) ≖ 3.	700 AL	S 3 AHP.) = -	.000									
SECTION (1)ORB.	LOWER WIN	16		DEPENDE	NT VARIA	BLE CP/C	95						•
2Y/8W	.2500	3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980				
X/CM							** ***							
.025				0023 0029	.0023		. 03 14							
.100				0055		.0103		.0231	.0205					
.153	.0121							*4201		•	•			
.177					.0143		• •							
. 200 299	0106			.0114										
. 302	0100			.0371			.0161		-			•		
.428						.0601	.0101							
.444	0184													
.487 .559	**			1515	.0827									
.509				.1010		.0599								
700						.0384								
.736	.1117													•
.800						.0214						• •		
.850				_ 0220		.0066	0157		0102					
	÷			0224			.0157		0183					
.850	= 4 :(600 AL	.PHA (1:		.000 Pi	.0055 0048	.0157	Q(PS	0183 SI) = 2.	4540	RN/L	= 3.0000	CPSTG	= 1.8033
.900 MACH (2)						.0065 0048 INF =	, 16570			4540	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (110RB. 1	LOWER WIN	. G) = -5	DEPENDE	.0055 0048 INF =	.16570 BLE CP/C	PS	SI) = 2.		RN/L	= 3.0000	CPSTG	- 1.8033
.900 MACH (2)	110RB. 1		. G			.0065 0048 INF =	, 16570			4540 .9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (110RB. 1	LOWER WIN	. G) = -5	DEPENDE	.0055 0048 INF =	.16570 BLE CP/C	PS	SI) = 2.		RN/L	= 3.0000	CPSTG	= 1.8033
.950 .900 MACH (2) SECTION (ZY/BW X/CW .000	110RB. 1	LOWER WIN	.3480) = -5	DEPENDER	.0055 0048 INF = VT VARIAL .6000	.16570 BLE CP/CP	.8500 .1958	SI) = 2.		RN/L	= 3.0000	CPSTG	= 1.8033
.950 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001	110RB. 1	LOWER WIN	. G) = -5	DEPENDE	0055 0048 INF = NT VARIA .6000 .2020 .0296	.16570 BLE CP/C	.8500 .1958 .0212	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.950 .900 MACH (2) SECTION (2Y/BW .000 .001 .002	110RB. 1	LOWER WIN	.3480 .0079	.4000	DEPENDER	.0055 0048 INF = NT VARIAL .6000	.16570 BLE CP/CP	.8500 .1958 .0212	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .003	110RB. 1	LOWER WIN	.3480 .0079) = -5	DEPENDER	.0055 0048 INF = NT VARIA .6000 .2020 .0296 .0079 .2999	.16570 BLE CP/CP	.8500 .1958 .0212 .0182	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005	110RB. 1	LOWER WIN	.3480 .0079) = -5 .4000	DEPENDER	.0055 0048 INF = NT VARIAL .6000	.16570 BLE CP/CP	.8500 .1958 .0212	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.950 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005	110RB. 1	LOWER WIN	.3480 .0079	.4000 .4000	DEPENDER	.0055 0048 INF = VARIAL .6000 .2020 .0296 .0079 .2998 .0692	.16570 BLE CP/CP	.8500 .8500 .1958 .0212 .0182 .2571	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.950 .900 MACH (2) SECTION (2Y/BW X/CW .001 .003 .004 .005 .025	110RB. 1	LOWER WIN	.3480 .0079	.0281 .0278	DEPENDEN .5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CP .7500	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .001 .003 .004 .005 .025 .045	110RB. .2500	LOWER WIN	.3480 .0079	.4000 .4000	DEPENDEN .5000 .1026	.0055 0048 INF = VARIAL .6000 .2020 .0296 .0079 .2998 .0692 .0141	.16570 BLE CP/CP .7500	.8500 .8500 .1958 .0212 .0182 .2571	SI) = 2.	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .045 .100	110RB. 1	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CP .7500	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .025 .100 .153 .177	.2500	LOWER WIN	.3480 .0079	.0281 .0278	DEPENDEN .5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CP .7500	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .001 .002 .003 .004 .005 .025 .100 .153 .177 .200	.0141	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CF .7500 .1919	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .001 .002 .003 .004 .005 .025 .045 .100 .153 .177 .200 .299 .302	.2500	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CP .7500	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW .000 .001 .002 .003 .004 .005 .025 .100 .153 .177 .200 .299 .302	.2500 .0141 .0131	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CF .7500 .1919	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .001 .002 .003 .004 .005 .025 .045 .100 .153 .177 .200 .299 .302	.0141	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026 .0175	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CF .7500 .1919	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033
.850 .900 MACH (2) SECTION (2Y/BW X/CW .000 .001 .002 .003 .004 .005 .025 .045 .100 .153 .177 .200 .299 .302 .428	.2500 .0141 .0131	LOWER WIN	.3480 .0079	.0281 .0278	.5000 .1026	.0055 0048 INF = NT VARIAL .6000 .2020 .0296 .0296 .0079 .2999 .0692 .0141	.16570 BLE CP/CF .7500 .1919	.8500 .8500 .1958 .0212 .0182 .2571 .0414 .0162	.9500	.9980	RN/L	= 3.0000	CPSTG	= 1.8033

(RQ3LAE)

UPRT 1059 (1H4) 01-T15-SEN16 ORB. LOWER WING 4.600 ALPHA (1) = -5.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .2500 .4000 .5000 .3011 .3480 .6000 .75)0 .8500 .9500 X/CH .700 .736 .0342 .1368 .800 .0171 .850 .Diza .900 -.0035 .0109 .0036 -.0056 1.8033 MACH (2) =4.600 ALPHA (2) =PINF = .16570 Q(PSI) = 2.4540RN/L **=** 3.0000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CO/CPS SAVBM .2500 .3011 .3480 .4000 .5000 .6000 .7540 .8500 .9980 X/CH .000 .1681 .2107 -.0124 .001 .0053 -.0017 .1035 .0256 .1693 .030B .002 .0146 .223B .0147 .003 .2407 .004 .0594 .0562 .005 .0142 .0177 .025 .0061 .0168 .0253 .045 .0053 .0174 .0171 .0223 .100 . 153 .0079 .177 .0197 .0130 .299 .0016 .302 .0352 1850. .0487 .428 444 -.0025 .487 .0675 .559 .0709 .0463 .700 .0230 .736 .800 .0873 .0115 .850 .0068 -.0113 .0016 -.0004 -.0052

UPWT 1059 (IH4) 01-T15-SEN16 ORB. VERT. TAIL

(RQ3VAE) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CF/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4431 .6014 .4540 .6508 .300 .0551 .0550 .0567

.500 .0494 .700 -.0065

.900 -.0028 -.0044 .0031

MACH (1) = 3.700 ALPHA (2) = 0.000 PINF = 0.32925 Q(P51) = 0.1551 RN/L = 0.0000 CPSTG = 0.7839

SECTION (1)ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3920 .3247 .2322 .3665

.300 .0055 -.0038 .0032

.500 -.0055 .700 -.0272

.900 -.0284 -.0257 -.0200

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1)ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4179 .3678 .3339 .5117

.300 .0251 .0214 .0236

.500 .0175

.700 -.0098

.900 -.0092 -.0066 -.0011

MACH (2) = 4.600

TABULATED SOURCE DATA - IH4

ALPHA (2) = .000 PINF

= 3.0000

Q(PSI) = 2.4540

UPWT 1059 (1H4) 01-T15-S8N16 ORB. VERT. TAIL

DEPENDENT VARIABLE CP'CPS

SECTION (1) ORB. VERT. TAIL

Z/BV .2990 .5320 .7650 .9050

X/CV

.3919 .3534 .0078 .0022 -.0027 -.0170 .000 .2126 .3476

.300 .500 .700 .900

-.0180 -.0157 -.0122

PAGE 153

UPWT 1059 (1H4) 01-T15-SBN 16 EXTERNAL TANK

(ROSTAE) (15 APR 76)

REFERENCE DATA		ARAMETRIC DATA
***************************************		111 cl 11 (= 11 cl + 1 = 11 cl + 1

	LREF = 1	2690.0000 290.3000 290.3000	INCHES		- .	0000 INC	HES				RN	I/L =	3.000	BETA	=	5.000
	MACH (1)	= 3.7	700 AL	.PHA []) = - 5	.000 F	INF =	.32925	QCPS	(l) = 3.	. 1551	RN/L	= 3.000	0 CP:	STG #	1.7839
	SECTION (1)EXTERN	VAL TANK			DEPENDE	NT VARIA	ABLE CP/C	:PS							
	X/LT	.0000	0050	.0100	.0400	.0800	. 1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
	THETA .000 45.000 67.500 90.000 112.500 135.000 157.500 167.000				.1842	.0865	0022		0213	0197 0015	0283 .1037 .0039	.3587 .0167 .0138		0438 .0006 .1053 .0571	. 0534	0194 0380 0483 0176 .0536 .0609 .0932
•	180.000 197.000 210.000 220.000 225.000	.9707	.8519	.6702	.5332	.3648 .3777	. 1495 . 1766 . 1746	.0617	.0378		.0350 .0449		.1453	.0340	.0340	.1520 .1052 .1107
	X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
	THETA .000 45.000 67.500 90.000 112.500 123.000 135.000 157.500	.0802	0149 .0373 .0991	.0035	0448 0077 .0675 .0646 0013	.0230	.0373 .0654 .0298	.5730	0352 0379 0330 .0285 .0723	0329 .0615 .0483		0255 0014 .0366 .0301	0257 0261 0232 0025 .0287	0080 .0381 .0357 .1082	.0906	.0072 .0205 .0590 .1395 .1369 .1358
	161.000 166.000 180.000 197.000 210.000 220.000 232.000	. 9446 . 3848	.2554	.0768	.0340 .0860 .0830	.0456	.0769	.0843	.0517 .1003	.0288	.0540 .0404 .0517 .0831	.0205	.0566 .0588	.1117		.1719 .1799
:	X/LT THETA 123.000	.9250 .1635	.9350	.9370	.9750			·	, 13							

PAGE 155 TABULATED SOURCE DATA - 1H4 DATE 20 APR 76

(ROSTAE)

UPWT 1059 (1H4) 01-T15-SBN'6 EXTERNAL TANK

ALPHA (1) = -5.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

3.700

THETA 151.000 180.000 .2544 .2880 -.0255

210.000			.4886	~.0200		. •					•				
MACH (1)	= 3.7	700 AL.	PHA (2) = _	.000 P	INE =	.32925	QtPS	1) = 3.	1551	RN/L	= 3.000	D CP	STG =	.7839
SECTION (DEXTER	VAL TANK			DEPENDE	NT VARIA	BLE CP/C	PS"	· · · · · · · · · · · · · · · · · · ·		٠.			•	•
X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000 157.500				.3280	. 1932	.0492	0174	0119	0108 0100	0087 .0243 0103	.4516 0140 0063		0065 .0055 .0026 0167	0132	.0081 0243 0253 0253 0231 .0082 .0554
167.000 180.000 197.000 210.000 220.000 225.000 232.000	.9756	.6719	.6497	.3220	.2118 .2215	.0585 .0810 .0845	.0040	0098		0112		.0530	.0115	.0413	.0485 .0602 .0478
X/LT	.4250	.4580	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 90.000 112.500 123.000 135.000 157.500 161.000 166.000 197.000 210.000 220.000	.0485 .0307 .1994	0344 0256 .0516 .0485	0153 .0629	0309 0312 0124 .0387 0088 .0482 .0427 .0962	.0104	0033 0012 .0023 0204 .0032	.0355	0082 0093 .0047 0044 .0036 0143 .0081 .0208	.0004 .0102 028 021	0084 0116 .0064 0182 .0172 .0086 .0085	0104 0092 .0028 0008 0222	0122 0116 0116 0084 .0008 0055 .0090 0013	0095 .0491 .0498 .0426 .0159	.0568	.0037 .0396 .0295 .0701 .0692 .0612 .0634
								,,,,,,							

UPWT 1059 (1H4) 01-T15-98N16 EXTERNAL TANK

(RQ3TAE)

.0537

MACH (1) = 3.700 ALPHA (2) =.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .9750 X/LT .9250 .9350 .9370 THETA 123.000 .0884 151.000 .1481 180.000 .1537 -.0324 210,000 .3612 **= 1.8033** MACH (2) = 4.600 ALPHA(1) = -5.000PINF .16570 Q(PSI) = 2.4540RN/L 3.0000 CPSTG = SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3500 .3750 .4000 X/LT .2750 .3000 .3250 .3350 .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 THETA -.0033 .1350 .000 .2504 .0255 45.000 -.0089-.0126-.0211 . 67.500 -.0020 -.0081 .3972 .0181 90.000 -.0085 -.0081 .0511 .0160 112.500 -.0024 .0021 -.0044 .0392 135.000 .0113 .0225 .0062 .0130 .0600 157,500 .0626 167.000 .0098 .0316 .0823 180.000 .2712 .0115 .9567 .7477 .6621 .3952 .0931 .0311 .0137 197.000 .2754 .1139 .0172 .0695 210.000 .1164 .0692 220.000 .0723 225.000 . 1435 232.000 ,9000 X/LT .4250 .4500 .4750 .5000 .5250 .7000 .7500 .8000 .8500 .8750 .5500 .5750 .6000 .6500 THETA -.0086 .000 -.0165 45.000 -.0163 -.0015 -.0118 ..0149 67.500 -.0211 -.0161 -.0144 -.0112 -.0114-.0120 .0472 -.0139 -.0016 90.000 -.0153 -.0102 .0134 .0064 .0007 .0109 .0829 112.500 123.000 .0290 .0436 .0079 .0017 .0232 .0267 .0449 .0313 .0215 .0829 .0571 .0625 .0783 135.000 .0498 .0504 .0263 .0244 .0097 .0180 .0168 .0127 .0557 .0786 .0341 157.500 .0548 .0500 -.0029 -.0077-.0012 -.0034 -.0099 -.0086-.0106 .0115 161.000 .0364 166.000 .0294 .0283 .1339 .0731 .2076 .2855 .0775 .0160 .0118 180,000 .0539 .0513 .0386 . 04 30 .0421 .0260 .0190 . 1281 197.000 .0250 .0832 .0453 210.000 .0603 .3739 220.000 .0534

232.000

TABULATED SOURCE DATA - IH4

(RQ3TAE) UPWT 1059 (IH4) 01-T15-SIN16 EXTERNAL TANK MACH (2) = 4.600 ALPHA(1) = ~5.000SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/L1 .9250 .9350 .9370 .9750 THETA 123.000 .1119 151.000 .1839 180.000 .2147 -.0154 210.000 .4429 MACH : (2) =4.600 ALPHA (2) =.000 CPSTG = 1.8033PINE Q(PS1) = 2.4540RN/L 3.0000 .165"0 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CF/CPS X/LT ,4000 .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 THETA .000 .3337 .1975 .0099 .0534 45,000 -.0100 67.500 .0073 -.0152 .0022 90.000 .4252 -.0108 -.0104 -.0043 -.0030 .0199 .0199 112.500 -.0030 -,0023 -.0108 .0080 -.0111 135,000 .0005 -.0043 .0025 .0155 157.500 .0508 167.000 .0303 180.000 .9878 .6615 .6611 .3006 .2010 .0572 -.0003 .0176 .0298 .0420 .0105 -.0034 197.000 .2060 .0739 .0128 .0460 210.000 .0801 220.000 .0303 225.000 .0425 232.000 .1145 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .9000 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 THETA .000 -.0090 -.0052 45.000 -.0043 -.0103 .0014 67.500 -.0180 .0034 -.0036-.0064 -.0047 .0165 -.0046 90.000 -.0166 -.0139 -.0081 -.0021 .0013 -.0008 -.0022 -.0018 .0334 112.500 -.0152 -.0135 ssoo. .0034 1510. .0095 .0108 .0207 .0754 .0059 123.000 .8493 .0194 .0636 135.000 .0346 .0349 .0124 -.0026 .0009 .0023 .0008 .9118 .0298 .0556 157.500 .0311 .0237 -.0086 -.0060 -.0117 .0013 -.0119 -.0099 -.0041 .0126 .0187 .0541 161.000 .0176 166.000 .0460 .0172 180.000 .1512 .1565 .0613 .0464 .0193 .0132 .0189 .0330 .0149 .0107 .0060 .0430 .1144 .0112 197.000 .1014 .0142 .0990 210.000 .0417 .0123 220.000 .3483 .0338

-.0015

.0153

PAGE 157

TABULATED SOURCE DATA - 1H4

PAGE 158

UPWT 1059 (1H4) 01-T15-S8416 EXTERNAL TANK

(RQ3TAE)

MACH (2) = .000 4.600 ALPHA (2) =

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

.0896

THETA 123.000 151.000 180.000 210.000

.1390

.1380 -.0143 .2924

225.000

247.500 260.000

270.000

315.000

.1034

.1123

.1268

.2525

. 1546

.0931

.1064

.2704

.5524

-.0191

-.0247

-.0281 -.0310

-.0017

-.0219 -.0132 -.0296

1150.

.0402

.0253

-.0069

.0023

-.0182 -.0121

.0057

.0004

ORIGINAL PAGE IS OF POOR QUALITY UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RO3SAE)

						•									
MACH	(1) = 3.	700 4	NLPHA (8	?) =	.000										
SECTI	ON (1)50L1D	RCKT. E	BSTR		DEPENDE	NT VAR!A	BLE CP/C	PS							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.0 180.0 210.0 215.0 240.0 247.5 277.5 270.0	000116 00 00 00 00 00 00 .0209 000080		0026 .0759 0163	0075 0255 0176	.0021	.0770	0145	.0474 .0219 0119 0046 0027	0283	0264	0003 0283 0056 .0016				
MACH		600 .	ALPHA (1) = -5	.000 P	INF =	. 16570	QCPS	ij) = 2.	4540	RN/L	≈ 3.0000	D CP!	STG =	1.8033
SECT!	ON (1)SOLID	RCKT. E	BSTR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.0 180.0 225.0 247.5	00 00 00		.0550	.0503 .1640		.0479 .1361				.0254	.0038	.0044	0176 .0458 .0553 .0424	.0381	.0286 .220
260.0 270.0 315.0	00	.2737	.1662	.0893	.0959	. 1237	. 1962	.2205	0043	0054	0116	0142	.0017	. 0054	0044
X/LSRB	.7000	,7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	,9600	.9900			
PSI 90.0 180.0 210.0 215.0	0100.0010	.0293 .2521	0157 .1525	0018	.0177	. 1289	.0134	.0083 .0334 .0112	0180	0128	.0137				
225.0 240.0	00	.3057	.0040	0133				.8057 0094			0082 2550	.0110			
247.5 270.0 315.0	18000051	.2216	0082	0156				0095			•	.0530		•	

-.0031

-.0099

315.000

.2080

-.0074

-.0119

أوبه بيها

PAGE 161 DATE 20 APR 76 TABULATED SJURCE DATA - IH4 UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR. (RQ3SAE) CPSTG = 1.8033 RN/L Q(PSI) = 2.4540MACH (2) = 4.600 ALPHA (2) = .000 .16570 DEPENDENT VARIABLE CP/CPS SECTION (1) SOLID RCKT, BSTR .3000 .4000 .5000 . 1500 .2000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 PS I .0621 .1049 -.0148 .0588 90.000 1.1240 .0646 -.0108 .0009 180.000 .0870 .0160 .0234 225.000 -.0003 .0103 247.500 260.000 270.000 -.0055 .0191 .0140 -.0065 -.0092 -.0072 -.0129 .1368 .1029 .2203 -.0034 -.0019 .2843 . 1722 .0966 -.0196 315.000 .9900 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .0290 .0217 .0048 .0234 90.000 -.0017 .0570 -.0046 -.0011 -.0123 180.000 -.0028 .2589 .0448 .0045 210.000 215.000 225.000 -.0106 .0131 .0103 -.0072 -.0131 .0011 .0079 .3349 .0009 ~.0098 240.000 247.500 270.000 .0043 .0070 .0120

-.0039

129.500

UPHT 1059 (1H4) 01-T22-SBN1() ORBITER FUSELAGE (R03888) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES RN/L = 3.000 BETA = .0000 INCHES

.000 LREF = 1290.3000 INCHES YMRP .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 CPSTG = 1.7839 Q(PSI) = 3.15383.0000 MACH (1) = 3.700 ALPHA (1) = -10.000PINF = .32910 RN/L SECTION (!)ORBITER FUSELAGE DEPENDENT VARIABLE CP/CFS X/LB .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800 .0000 .0050 .0200 .0400 .0500 .0600 .0800 PHI .0583 .0978 .000 1.2468 .5350 .1859 .0716 .0577 .1052 10.000 .0577 20.000 .0541 24.500 39.000 .0496 .0887 .5936 163,000 1.0240 174.000 .9061 1.0129 .9410 180.000 1.2468 .4076 .3411 .3350 .3763 1.0000 X/LB .9500 .9630 .9750 1.0145 .8620 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 . 8290 PHI -.0340 -.0360 .000 .1188 .0761 .0726 .0479 .0323 .0428 →.0205 23.000 .0745 24.000 .0965 .0917 31.500 33.100 .0845 .0810 35.000 40.000 .0722 .0972 45.000 .0900 50.000 .0697 51.600 .0570 .0375 57.000 .0313 60.900 65.000 .0280 .0269 69.000 69.000 .0174 79.300 .0331 95.500 95.700 96.300 .0331 .0405 .0167 .0672 103.000 .0457 -.0324 105.000 112.600 .0450 .0365 .0406 117.500 120.800 .1321

.3116

-.0032

58.000

PAGE 163 UPWT 1059 (1H4) 01-T22-S3N16 ORBITER FUSELAGE (RQ3898) MACH (1) = 3.700 ALPHA(1) = -10.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .9750 1.0000 1.0145 .2009 .3000 .4000 .5000 .6000 .7800 .8010 .8050 .8290 .8620 .9500 .9630 PHI 130.000 .2253 .0680 .0304 135.000 .0332 -.0008 139.600 .2333 144,000 .0654 155.000 .2617 180.000 .1695 .0168 .0329 X/LB 1.0250 1.0500 PHI .000 -.0359 -.0359 MACH (1) =3.700 ALPHA (2) =PINE .32910 Q(PSI) = 3.1538RN/L **3.0000** CPSTG 1.7839 -5,000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .1800 .0000 .0050 .0200 .0400 .1600 .1700 .1750 .0500 .0600 .0860 .1000 .1250 .1500 .1650 PHI .000 1.0512 .4659 .1565 .0817 .0513 .0436 .0546 .1005 10.000 .0543 20.000 .0527 24.500 .0502 39.000 .0639 163.000 .4764 174.000 .8372 .7887 190.000 1.0512 .2946 .2392 .2340 .2648 .7226 .8365 X/LB .2000 .3000 .4000 .5000 .8000 .9500 .9630 .9750 1.0000 1.0145 .6000 .7800 .8050 . 8290 .8620 PHI -.0387 -.0404 .000 .1024 .0586 .0522 .0283 .0034 -.0317 .0119 23.000 .0688 .0749 24.000 31.500 .0677 33.100 .0932 35.000 .0736 .0593 40.000 .0839 45.000 .0827 50.000 .0583 51.600 .0165 57.000 .0221 60,900 .0218 65.000 .0169

UPWT 1059 (IH4) 01-T22-SENIB ORBITER FUSELAGE (RQ3888) ALPHA (2) = -5.000MACH (1) = 3.700 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CF/CPS X/LB .9750 1.0000 1.0145 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 69.000 .0127 79.300 .0152 95.500 .0207 .0038 95,700 -.000296.300 .0527 103.000 .0215 -.0385 105.000 112.600 .0201 117.500 120.800 .0190 .0191 .1204 127.900 129.500 .1771 .1840 130.000 . 1750 .0663 .0245 135.000 -.0101 .0098 139.600 .1947 144.000 .0562 155.000 .2052 190.000 . 1539 .0068 .0173 X/LB 1.0250 1.0500 PHI .000 -.0397 -.0393 3.700 ALPHA (3) =.32910 Q(PSI) = 3.1538RN/L 3.0000 CPSTG = 1.7839 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800 PH I .000 .8695 .4318 .1995 .1188 .0752 .0151 .0803 .0589 10.000 .0724 20.000 .0630 24.500 .0553 39.000 163.000 .0657 .3492 174.000 .6164 .5896 180.000 .8696 .1997 .1541 . 1533 .1768 .5133 .6152 X/LB .2000 .3000 .4000 .5000 .7800 .8000 .8050 .9500 .9630 .9750 1.0000 1.0145 .6000 .8290 .8620 PHI : .000 .0404 .0459 .0359 .0154 -.0025 -.0183 -.0373 -.0420 -.0424 23.000 .0505

-.0404

PAGE 165

DATE CO AD	u 10		INDULATE	יאטטעני עי	E DAIA -	INT								, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
				UPW	T 1059 (1	H4) 01-	T22-58111	6 ORBIT	ER FUSELA	/GE		(RQ3	688:		
MACH (1)	= 3.	700 _e At	LPHA (3)) =	.000						£.,				
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/C	PS ·							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8820	.9500	.9630	.9750	1.0090	1.0145
PHI 24.000 31.500	.0331												·	•	
33.100 35.000	.0276	.0569													
40.000 45.000	.0288	.0605 .0648		٠.					-		·			• •	
50.000	.0483												0117		
51.600 57.000	*	.0204			•								0117		
60.900 65.000		.0120 .0079											•		
68.000 69.000		.0054											0198		
79.300 95.500 95.700		0071			0061 0038		0131						•		
96.300 103.000	.0401	-10071			0035										
105.000															0393
112.600 117.500 120.800				•	0042				.0819			0022		0016	
127.900 129.500		·				.2148		. 1917							
130.000 135.000		0246			0030				. 1280	.0311		.0018			
139.600 144.000 155.000	11:20	102.0							.1051			.0280			
180.000	.1438 .1001	.0016			.0012										
X/LB	1.0250	1.0500		•				. •							

ORIGINAL PAGE

DWIE CO W	FR 70		IABULAI	בט שטטאנ	E DATA -	1144								PAGE	100
	•			UPA	IT 1059 (IH4) 01-	-T22-S8N1	6 ORBITE	ER FUSELA	GE		(RQ3	BBB)		
MACH ()) = 3.	700 A	LPHA (4	·) = 5	5.000 P	INF =	.32910	Q(PS	1) = 3.1	538	RN/L	= 3.000	O CF	STG =	1.7839
SECTION	(DORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	ABLE CP/3	P\$							•
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	.1600	.1650	.1700	. 1750	. 1800
PHI .000	.8227	.4943	.2012	.1185		.0780	.0683	.0338		.0049		•			
10.000	.0247		.5015	.1165		.0780	.0003	.0368		.0045					
24.500					-			.0623 .0728				•			
39.000 163.000						-		, 0569	, •					.2465	
!74.000 180.000	.0227				.1350			.0974	.1015	.1162	.3330	.4226	.4419	•	.4314
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 .000	.0383	.0416	.0301	0058	0177		0086				0357		0394	0375	
23.000 24.000	* *	.0428	.0301	0056	0133		-,0086				0357		-,0357	-,0515	
31.500	.0242 .0251														
33.100 35.000	.0202	.0341													
40.000 45.000	.0157	.0224 9850.													
50.000 51.600	.0281												0247		
57.000 60.900		.0075 .0073			-								-		
65.000 68.000		.0047		ě	-								0271		
69.000 79.300		.0040			0237										
95.500 95.700		0066			0231		0294								
96.300 103.000	.0363				0238										
105.000 112.600				•	0254						•				-, 0383
120.800									.0338			0074		0082	
127.900 129.500						.0263		.0892							
130.000 135.000		0332			0229				.0655	.0084		0104	•		
139.600 144.000		·-			_				.0678			.0008			
155.000 180.000	.0951 .0606	0224			0167										

TABULATED SOURCE DATA - 1H4

	,					••••									•
				UPW	T 1059 (IH4) OI-	T22-S8N'6	ORBITE	R FUSELA	GE		(RQ3	B88)		
MACH (1)	= 3.	700 AL	PHA (4)	= 5	.000										
SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDEN	NT VARIA	BLE CP/CP	s							
X/LB	1.0250	1.0500													
PH1 .000	0358	0341													
MACH (2)	= 4.	600 AL	LPHA (1)	= -10	.000 Pi	INF =	.16570	Q(PS	() = 2.4	551	RN/L =	3.005	o CP	5TG =	1.8033
SECTION (()ORBIT	ER FUSEL/	AGE		DEPENDEN	T VARIA	BLE CP/CP	s		:			•		-
X/LB	.0000	.0050	.0200	.0400	.0500	.0800	.0800	.1000	.1250	. 1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000	1.4326	.6063	.2021	.1109		.0868	.1030	.0915 .0883 .0851 .0811		.0943				.5955	
174.000 180.000	1.4326				.4455			.2963	.2874	.3213	.9024	1.0703	1.0556	. 2555	.8519
X/LB	.2000	.3000	.4000	.5008	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9530	.9750	1.0000	1.0145
PHI	+2080	. 2000	.4000	.5008	.6000	. 7800	.8000	.0000	.0230	.0050	.8300	• 2020	.5750	1:0000	1.01.40
.000 23.000 24.000 31.500 33.100	.0565 .0481 .0616	.0792 .0780	.0460	.0583	.0391		.0386				0110		0197	0205	·
35.000 40.000	.0744 .0724														
45.000 50.000	.0752	.0577													
51.600 57.000 60.900 65.000 68.000		.0275 .0277 .0207											.0254		
69.000 79.300 95.500 95.700 96.300	.0880	.0169			.0303		.0328				• .			•	
103.000 105.000					.0306										0217
112.600 117.500 120.800	•				.0283				.1342			.0340		.0367	

PAGE 167

UPWT 1059 (1H4) 01-T22-SBN1G ORBITER FUSELAGE

(RQ3999)

				U ,				0	,						
WACH (S) = 4.0	600 AL	PHA (1)	= -10	.000						•				
SECTION	(LICRBIT	ER FUSEL/	AGE.		DEPENDEN	IT VARIA	BLE CP/CP	5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 127.900 129.500 130.000 135.600 139.600 144.000 155.000	.2572 .1788	.0136			.0297 .0305	.3144		.2770	. 1744 . 1805	.0665		.0258 .0418			. ·
X/LB	1.0250	1.0500													
PHI .000	0233														
MACH (2			.PHA (2)	= - 5.		NF =	.16570		() = 2.	1 551	RN/L =	3.0050) CP	STG =	1.8033
SECTION	(1)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	45							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	. 1600	. 1650	.1700	.1750	.1800
PHI ,000 10,000 20,000 24,500 39,000 163,000	1.1599	.5134	.1700	.1167		. 1032	.0799	.0697 .0656 .0625 .0625 .0806		.0531				.5326	
174.000 180.000	1.1599				.3076			.2444	.2414	.2754	.7707	-9436	.9624		.8713
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	.0361	.0599 .0557	.0324	.0446	.0219		.0092				0163		0213	0215	•
24.000 31.500	.0358 .0339				-			•	-				٠		
33.100 35.000	.0399	.0512											•		· -
40.000 45.000 50.000 51.600	.0497 .0554	.0452 .0429											0056		
57.000 57.000 60.900		.0220 .0159					•						• • • • • • • • • • • • • • • • • • • •		

.9113

PAGE 169 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3888) UPWT 1059 (IH4) 01-T22-S8N16 ORBITER FUSELAGE MACH (2) =4.600 ALPHA (2) = -5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CFS .9750 1.0000 1.0145 X/LB .2000 .5000 .8290 .9500 .9630 .3000 .4000 .6000 .7800 .8000 .8050 PHI .0138 65,000 68.000 -.0037 69.000 .0085 79.300 :0145 95.500 .0021 .0159 95.700 .0062 .96.300 103.000 .0647 .0142 105.000 -.0269 112.600 .0034 117.500 .0220 .0233 120.800 .1396 127.900 .1334 129.500 .1587 .0777 .0224 130.000 .1643 135.000 -.0035 -.0026 139.600 . 1593 .0397 144.000 155.000 .2307 180.000 .1665 .0187 .0180 X/LB 1.0250 1.0500 PHI .000 -.0229 -.0222 MACH (2) = 4.600 ALPHA (3) = .000 PINF .16570 Q(PSI) = 2.4551RN/L **3.0050** CPSTG = 1.8033 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1650 .1700 .1750 X/LB .1000 .1600 .0000 .0050 .0200 .0400 .0500 .1250 .1500 .0500 .0800 PHI .000 .0603 .0150 .9113 .4220 .2136 .1295 .0890 .0690 10.000 .0555 20.000 .0525 24.500 39.000 .0521 .0671 .3550 163.000 .6084 174.000

.1526

. 1539

.1744

.4886

.6554

.2013

UPWT 1059 (1H4) 01-T22-S8N16 ORBITER FUSELAGE

ORBITER FUSELAGE (RQ38)

				U) N	1 1000 11		155 201416	, 0,,0,,,,	-11 1 40000	Ų.		***************************************			
MACH (2)) = 4,	600 At	LPHA (3)) =	.000.										
SECTION (IORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/CF	rs							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8030	.6050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 .000 23.000 24.000	.0203	.7618 .0469	.0102	.0319	.0044		0033				0248	•	0274	0263	
31.500 33.100 35.000 40.000	.0263 .0308 .0416	.0442						•							•
45.000 50.000 51.600	.0502	.0405								,			0115		
57.000 60.900 65.000 68.000 69.000		.0115 .0115 .0077						٠.		•			0106		
79.300 95.500 95.700 96.300	.0479	.0059			.0000 .0006		0080						-		
103.000 105.000	et ro.				.0009										0275
112,600 117,500 120,800 127,900					0008	.1108			.0741			.0007		.0012	٠
129.500 130.000 135.000 139.600		0118			0081			.1570	.1179	.0339		.0015			
155.000 155.000 180.000	.14 5 2	. 0024			0086			•	.0123			.0122			
X/LB	1.0250	1.0500						,	· · •						
PHI .000	0269	0265						,					٠		

PAGE 171 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3888) UPWT 1059 (IH4) 01-T22-SEN16 ORBITER FUSELAGE = 1.8033 3.0050 Q(PSI) = 2.4551MACH (2) = 4.600 ALPHA (4) = .16570 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CF/CPS X/LB .1600 .1750 .1800 .0000 .0050 .0200 .0600 .0800 .1000 .1250 .1500 .1650 .1700 .0400 .0500 PHI .0078 .000 .7862 .4977 .0837 .0635 .0201 .2099 .1244 .0212 10.000 20.000 24.500 39.000 .0653 .2263 163.000 .3587 174.000 180.000 .1291 .0979 .1083 .2759 .4365 .4441 .7862 .0912 1.0000 1.0145 X/LB .8620 .9500 .9630 .9750 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 PHI .000 .0201 .0414 .0276 -.0047 -.0244 -.0264 -.0247 .0061 -.0014 23.000 .0403 24.000 31.500 .0261 33.100 35.000 .0280 .0257 40.000 .0212 .0216 45.000 .0231 50.000 .0306 51.600 -.0215 57.000 60.900 .0064 65.000 -.0002 -.0181 68.000 69.000 -.0014 79.300 -.0146 95.500 95.700 -.0144 -.0204 -.0042 98.300 .0348 103.000 -.0147 -.0275 105.000 -.0160 -.0072 117.500 -.0106 .0323 127.900 .0074 129.500 .0396 .0086 -.0108 .0468 130.000 135.000 -.0200 -.0172 139.600 .0407 -.0069 144.000 155.000 .0980

180.000

.0710

-.0061

-.0153

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TABULATED SOURCE DATA - IH4

PAGE 172

UPWT 1059 (1H4) 01-T22-S8416 ORBITER FUSELAGE

(RQ3BBB)

MACH (2) = 4.600 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP'CPS

X/LB

LB 1.0250 1.0500

PHI 1

.000 -.0251 -.0244

PAGE 173

				UPWT 10	5 9 (1H4)	01-	722-S81	ORB.	UPPER	WING			CRQSUE	18) (I!	5 APR	76)	
	REFE	RENCE DA	TΑ									P	ARAMETRIC	DATA			
LREF = 1	0000.000 0003.000 0003.009	INCHES	XMRP = YMRP = ZMRP =	.0000	INCHES INCHES INCHES						RN/L	=	3.000	BETA	=	.000	
MACH (1)	= 3.	700 AI	LPHA (1)	-10.000	PINF	=	.32910	Q(P	S[) =	3.1538	RN/L	. =	3.0000	CPST) =	1.7839	3
SECTION (DORB.	UPPER WI	NG	DEP	ENDENT V	/ARTA!	PLE CP/CPS				٠.				,	• •	
5A\8M	.4000	.6000	.8000						٠								ĺ
X/CW .050 .200 .600 .800	.1732 .0334 0229	.0597 0250 0262	.1415										•				
.900		.0398	0048														

, 330		03							
MACH (1)	= 3.700	ALPHA (2) =	-5.000 PINF	= .32910	Q(PSI) = 3.1538	RN/L	= 3.0000	CPSTG = 1.	7839
SECTION (110RB. UPPER	WING	DEPENDENT	VARIABLE CP/CPS					
SA\BM	.4000 .60	0008. 00		•					
X/CW .050	.1098							•	

X/CH .050 .200 .600 .800 .900	.1098 .0164 0327	.0345 0334 0340 0402 0241	.1044 0157							
MACH [1)	≖ 3,	700 #	NLPHA (3)	=	.000	PINF	=	.32910	Q(PSI) =	3.1538

MACH []) =	3.700	ALPHA (3) =	.000	PINF	=	.32910	Q(PSI) =	3.1538	RN/L	=	3.0000	CPSTG	=	1.7839
OFOT1811 / 416	on wenne													

SECTION (I JUNE.	OPPER WI	NG
SA\BM	.4000	.6000	.8000
X/CW -050 -200 -600 -800 -900	7930. 7000. GeEO	.0168 0380 0376 .0439 0273	.0884

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PAGE 174
DATE 20 APR 76
                        TABULATED SOURCE DATA - IH4
                                   UPWT 1059 (1H4) 01-T22-S8N 6 ORB. UPPER WING
                                                                                             (RQ3UBB)
                                                                                  RN/L = 3.0000
                                                                                                      CPSTG = 1.7839
                                                               Q(PSI) = 3.1538
                      ALPHA (4) = 5.000 PINF = .32910
MACH^{-}(1) = 3.700
SECTION ( 1) ORB. UPPER WING
                                       DEPENDENT VARIABLE CP/CPS
SA\BM
           .4000
                 .6000
                         .8000
 X/CW
   .050
          .0469
   .200 -.0174 -.0029
                         .0370
         -.0436 -.0427
   .600
   .800
                 -.0425
   .900
                 .0405 -.0309
   .950
                 -.0285
                                                                                                      CPSTG = 1.8033
MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570
                                                                Q(PS1) = 2.4551
SECTION ( 1) ORB. UPPER WING
                                       DEPENDENT VARIABLE CP/CPS
2Y/BH
                         .8000
           .4000
                  .6000
 X/CH
          .1751
   .050
   .200
          .0440
                 .0691
                         .1626
          -.0127 -.0127
   .600
    800
                 -.0157
    .900
                 .0396
                          .0152
   .950
                 -.0056
                                                                                 RN/L = 3.0050
                                                                                                      CPSTG = 1.8033
                      ALPHA ( 2) = -5.000 PINF = .16570
                                                               Q(PSI) = 2.4551
MACH (2) =
              4.600
SECTION ( 1) ORB. UPPER WING
                                       DEPENDENT VARIABLE CP/CPS
SA/BM .
           .4000
                  .6000
                          .8000
 X/CM
   .050
          .1040
    .200
          .0207
                 .0464
                         .1118
    .600
          -.0197 -.0139
    .800
                 -.0141
                          .0061
    .900
                 . 0425
```

-.0064

```
PAGE 175
DATE 20 APR 76
                         TABULATED SOURCE DATA - IH4
                                                                                                            (RQ3UBB)
                                        UPWT 1059 (1H4) 01-T22-SBN16 ORB. UPPER WING
                                                                                                        = 3.0050
                                                                                                                       CP5TG = 1.8033
MACH ( 2) =
               4.600
                          ALPHA ( 3) =
                                            .000 PINF = .16570
                                                                          Q(PS1) = 2.4551
                                                                                                RN/L.
SECTION ( 1) ORB. UPPER WING
                                             DEPENDENT VARIABLE CP/CPS
SA\BM
            .4000
                     .6000
                             .8000
  X/CW
         .0626
-.0033 .0149
-.0230 -.0211
    .050
 .800
.800
                   -.0211
                   .0403 -.0053
-.0057
    .900
    .950
MACH ( 2) =
                4.600
                          ALPHA ( 4) =
                                                                                                RN/L
                                                                                                        × 3.0050
SECTION ( 1) ORB. UPPER WING
                                             DEPENDENT VARIABLE CP/CPS
SANGM
            .4000 .6000
                             .8000
  X/CM
          .0390
-.0136 .0017
-.0270 -.0248
-.0248
.0394
-.0098
    .050
    .200
                             .0367
    .600
    .800
                            -.0077
    .900
```

(RQ3L98) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

LREF = 12		INCHES	XMRP = YMRP = ZMRP =	· . (0000 INC	HES				RI	N/L	5 2	3.000	BETA =	.000
MACH (1)	= 3.	700 AL	РНА (1:	= -10.	.000 P	INF =	.32910	QtPSI) = 3.1	538	RN/L	. =	3.0000	CPSTG	= 1.7839
SECTION (liorB.	LONER WIN	G		DEPENDE	NT VARIA	BLE CP/CF	' 5							
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
X/CW .000 .001 .002 .003 .004 .005		.0690	.0425	.0444	.2005	.3075 .0596 .0266 .5001 .0987	.2932	.3512 .0366 .0358 .4640 .0729 .0345		.0108		•			
.045 .100 .153	.0587			.0473		.0212		.0409	.0357						
.177 .200 .299	.0369			.0226	.0280										
.302 .428 .444	.0358			.0646		.0366	.0366								
.487 .559 .600 .700 .736	.0417			.0468	.0519	.0261 .0261									
. 730 . 800 . 850 . 900	,1460			-,0104		0026 0039 0189	0203		0155						
MACH (1)	= 3.	700 AL	PHA (2) = -5.	.000 P	INF =	.32910	Q(PS)	() = Ž.1	1538	RN/L	. •	3.0000	CPSTG	1.7839
SECTION (1)ORB.	LOWER WIN	IG		DEPENDE	NT VARIA	BLE CP/C	s							•
2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.6500	.9500	.9980	•				
X/CH .000 .001 .002 .003 .004		.0458	.0252		.170B	.2580 .0483 .0158 .3974 .0773 .0265	.2726	.3371 .0384 .0230 .4259 .0739 .0227	pi-	.0840	-				

DATE 20 APR 76 **PAGE 177** TABULATED SOURCE DATA - IH4 (RQ3LBB) UPWT 1059 (1H4) 01-T22-S8N16 ORB. LOWER WING MACH ([) = 3.700 ALPHA (2) = -5.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS .9980 2Y/8W .2500 .3011 .4000 .5000 .6000 .7500 .8500 .9500 .3480 X/CW .025 .0311 .0296 .0386 .045 .0327 .0086 .038Ó .100 .0311 .153 .0346 -.0062 .200 -.0004 . 302 .0153 .0060 .0281 .42B .444 .487 .0358 1210. .0419 .559 .0310 .600 .700 .736 .0254 .0108 .0235 .800 .850 -.0059 -.0152 .900 -.0190 -.0177 -.0221 -.0199 **= 1.7839** MACH (1) = PINF .32910 Q(PSI) = 3.1538RN/L 3.0000 CPSTG ALPHA (3) =.000 SECTION (I) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .3011 .4000 .6000 .7500 .8500 .9500 .9980 .2500 .3480 .5000 X/CM -.0048 .000 .2450 .3481 .001 .0208 .0050 .1548 .0489 .2880 .0636 .0184 .0441 .3848 .002 .004 .0882 .1060 .005 .0297 .0444 .025 .0544 .0236 .0282 .045 .100 .153 .0260 .0123 .0529 .0624 .0154 -.0048 .202 .200 -.0075 .0044 -.0080 .0365 .428 .0267 -.0069 .487 .0388 . 559 .0223 .600 .0270

-.0199

-.0128

-.0051

.0100

(RO3LBB) UPWT 1059 (1H4) 01-T22-S8N16 CRB. LOWER WING MACH (1) = 3.700 ALPHA (3) =SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .2500 .4000 .6000 .3011 . 3480 .5000 .7500 .8500 .9500 .9980 X/CW .700 .0111 .736 .0036 -.0031 .800 .850 -.0115 .900 -.0204 -.0144 -.0183 -.0153 = 1.7839 MACH (1) = 5.000 PINF = .32910 Q(PSI) = 3.1538SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CM .000 .3257 .3916 -.0284 .001 .0022 -.0035 .2247 .0966 .3737 .1347 .0563 .3676 .1504 .002 .1008 .003 .3461 .004 .1915 .005 .0737 .1093 .025 .0263 .0774 .1056 .045 .0284 .100 .153 .0463 .1098 .1089 .0028 .177 .0196 .200 299 .0037 -.0072 .302 .0064 .0875 .428 .0463 . 444 -.0133 .487 .0301 .559 .0008 .600 .0290 .700 .0136 .0021 .736 .800 .0018 .850 -.0059

DATE 20 APR	76		TABULATE	D SOURCE	DATA -	IH4		•			-			P	AGE	179
•				טפעי	r 1059 (IH4) 01-	-:22-S9N1(s ORB. L	ONER WIN	16			(RQ3LBE	13		
MACH (2)	= 4.8	10 A1	_FHA (1)	= -10.	.000 P	INF ≃	.16570	Q(PS)	1) = 2,4	551 -	RN/L	· 😖	3.0050	CFSTG	=	1.8033
SECTION (٠.٠						BLE CP/C									
SANBM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CM																
.000		.0624	.0493		.2573	.3652 .0831	.3432	.4439 .0658		.0171						
.002		.0041	.0.155	•	,	.0406	.5.52	.0436								
.003						.5786		.5620							·	
.004 .005						.1318		.1154 .0480								
.025				.0517	.0513	.0515	.0561	10700								
.045				.0513												,
.100						.0274		.0533	.0549							
. 153 . 177	.0601				.0090											
.200				.0142	.0090											
.299	.0333			70.14												
.302				.0190			.0285									
.428	.0323		•			.0333										
.444 .487	.0323				.0545											
.559				.0576										·		
.600						.0360										
.700 .736	0460					.0221										
.800	. 0700					.0100										
.850						.0021								•		
.900				0005		0045	0083		0082							
MACH (2)	= 4.	006 A	LPHA (2)) = - 5	.000 P	INF =	.16570	Q(PS	1) = 2.	+551	RN/L	=	3.0050	CPSTG	*	1.8033
SECTION (110RB. 1	OWER WI	NG		DEPENDE	NT VARIA	GLE CP/C	PS								
2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
	•															
X/CH						. 2022		.3876		.0105	. •		•	•		
.000 .001		.0467	.0297		1810	.2873	.3097	.0623		.0105				÷	٠.	
.002						.0271		.0409								
:003						.4173		.4709								
.004						.1096		.1018								
.005 .025				.0331	.0376	.0355	.0557	.0450					-			
.045				.0305												•
.100	A1					.0193		.0448	.0508							
. 153 . 177	.0452				.0022											
.200				.0060	-0045							•				
.299	.0165								•							

UPWT 1059 (1H4) 01-722-SBN16 ORB. LOWER WING

(RG3LBB)

MACH (2) = 4.600 ALPHA (2) =~5.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\9M .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CW .302 .0084 .0226 .428 .0080 , կկկ .0185 .487 .0182 .559 .0297 .600 .0182 .700 .0176 .736 .0212 .800 .0063 .850 -.0006 .900 -.0041 -.0060 -.0091 -.0138 4.800 MACH (2) = ALPHA (3) = PINF Q(PSI) = 2.4551 CPSTG = 1.8033 .16570 RN/L 3.0050 = SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CW .000 .2421 .3465 -.0007 .0521 .001 .0233 .0113 . 1551 .2740 .0646 .002 .0394 .003 .3892 .3268 .004 .0942 .1079 .005 .0337 .0445 .025 .0240 .0364 .0529 .045 .0233 .100 .0146 .0480 .0600 .153 .0225 .177 -.0014 .200 .0000 .299 .0034 .302 -.0014 .0309 .428 .0146 .444 .0020 .487 .0081 .559 .0007 .600 .0136 .700 .0016 .736 -.0072 .800 -.0082 .850 -.0125 .900 -.0102 -.0153 -.0052 -.0124

PAGE 181 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (ROSLEB) UPWT 1059 (IH4) 01-TR2-SBN16 ORB. LOWER WING CPSTG = 1.8033 MACH (2) = SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS 2Y/8W .9980 .3011 .3480 .4000 .5000 .6000 .7500 .8500 X/CM .3143 .0990 -.0135 .000 .001 .0025 .1920 .3940 .1048 .3416 .1890 .002 .0612 .3493 1528 .0788 .003 .004 .005 .025 .100 .153 .177 .200 .299 .302 .1157 .1307 .0216 .0649 .0235 .0584 .1087 .0115 .0225 .0075 .0010 .0068 .0647 .0408 .444 .487 -.0048 .0208 .559 .600 .700 .736 .800 .850 .0010 .0208 ~.0065 -.0032

-.0084

-.0126 -.0036

.0107

-.0095

UPWT 1059 (1H4) 01-T22-S8N16 ORB. VERT. TAIL

.0307

.300

.500

.700

.900

.0855

.0535

.0612

.0080 -.0149 -.0003 -.0125

(RQ3VBB) (15 APR 76) PARAMETRIC DATA REFERENCE DATA BETA. .000 RN/L 3.000 SREF = 2590.0000 SQ.FT. .0000 INCHES LREF = 1290.3000 INCHES BREF = 1290.3000 INCHES YMRP = :0000 INCHES ZMRP = .0000 INCHES SCALE = .0100 MACH (1) = RN/L ≈ 3.0080 CPSTG = 1.78393.700 ALPHA (1) ≈ -10.000 PINF $\approx .32910$ Q(PSI) = 3.1538SECTION (I)ORS, VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/8V .2990 .5320 .9050 .7650 X/CV .5046 .000 .4100 .6026 .6636 .1111 .300 .2104 .0981 .500 .1527 .700 .0413 .900 .0173 .0261 .0083 × 1.7839 CPSTG Q(PSI) = 3.15393.0000 MACH (1) = 3.700ALPHA (2) = -5.000 PINF = .32910 SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .4823 .3926 .4068 .5056 .000 .300 .1151 .0675 .0511 .1021 .500 .700 .0280 .0165 -.0054 .900 -.0038 CPSTG = 1.7839 Q(PS1) = 3.1538RN/L = 3.0000MACH (1) = 3.700 ALPHA (3) = .32910 .000 PINF SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .000 .4084 .3411 .3014 ,3598

PAGE 183 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) 01-T2?-S8N16 ORB. VERT. TAIL (RQ3VBB) RN/L = 3.0000 CPSTG = 1.7839 Q(PSI) = 3.15383.700 ALPHA (4) = 5.000 PINF = .32910 MACH (1) = SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS .7650 Z/BV .2990 .5320 .9050 X/CV .000 .3301 .3090 .2820 .2273 .390 .0483 . 0345 .0300 .500 .0395 -.0082 .700 -.0265 -.0141 -.0196 .900 CPSTG = 1.8033**= 3.0050** 4.600 ALPHA (1) = -10.000 PINF = .6570 SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .9050 .5320 .7650 X/CV .000 .4050 .6372 .5546 .7356 .300 . 1240 .0831 .0806 .0939 .500 .700 .0299 .900 .0188 .0230 .0057 3.0050 Q(PSI) = 2.4551RN/L 4.600 ALPHA (2) = -5.000 PINF = .16570 SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 . 7650 .9050 X/CV .000 .3938 .3579 .3845 .5161 .0551 .0473 .300 .0701 .500 .0625 .700 .0245 .900 .0046 .0181 -.0001 CPSTG = 1.8033 RN/L 3.0050 Q(PS1) = 2.4551MACH (2) = 4.600 ALPHA (3) □ .000 PINF = .16570 SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .2344 .000 .3615 .3426 .3434

.300

.500

.700

.900

.0507

.0301

.0309

-.0021 -.0052 .0248

-.0101

<u>)</u>

TABULATED SOURCE DATA - 1H4

PAGE 189

UPWT 1059 (1H4) 01-T22-S8N16 ORB. VERT. TAIL

(RQ3VBB)

CPSTG = 1.8033 RN/L = . 3.0050 MACH (2) = ALPHA (4) = 5.000 PINF = .16570 Q(PSI) = 2.4551

SECTION (1)ORB, VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.3004 .2569 .1863 .0356 .0212 .0124 .0212 .0212 -.0091 -.0144 -.0121 -.0148 .2623

.000 .300 .500 .700

123.000

.0328

TABULATED SOURCE DATA - IH4

(15 APR 76) UPWT 1059 (1H4) 01-"22-SEN16 EXTERNAL TANK (RQ3TBB) PARAMETRIC DATA REFERENCE DATA 3.000 BETA .000 RN/L SREF = 2690.0000 SQ.FT. XMRP .0000 INCHES LREF = 1290.3000 INCHES .0000 INCHES YMRP E BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 Q(PSI) = 3.1538RN/L = 3.0000 CPSTG = 1.7839 .32910 MACH (1) =3.700 ALPHA (1) = -10.000PINE SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3350 .3750 .4000 .2500 .3000 .3250 .3500 .2750 X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 THETA -.0072 .1947 .0926 .000 -.0024 -.0407 45.000 -.0462 -.0284 -.0409 67.500 .1867 .4382 .0090 -.0158 -.0092 -.0006 90.000 -.0025 .0591 .0242 .0471 .1124 112.500 .0124 .0626 .0290 .0330 .0930 135.000 .0808 157.500 .0939 167.000 .0835 .0365 .0458 .6900 .5213. .3559 . 1466 .0625 .0365 .0338 180.000 .9860 .7436 .3545 . 1452 .0321 197,000 .0516 .1356 210.000 .0252 220,000 .0537 225.000 .0646 232.000 .9000 .8500 .8750 .8000 .5750 .6000 .6500 .7000 .7500 X/LT .4250 .4500 .4750 .5000 .5250 .5500 THETA -.0161 -.0212 .000 -.0113 -.027345,000 -.0+02 -.0278 -.0105 -.0383 -.0345 -.0261 67.500 -.0468 -.0347 .0226 .0149 .0081 -.0002 -.0028 ~.0017 .0297 90.000 -.0126 -.0108 .0301 .0659 .0494 .0386 112.500 .0327 .0351 .0631 .0729 .0883 .0735 .0291 .0362 .0307 123.000 .0465 .0626 .0609 .0467 .0364 .0346 135.000 .0754 .1026 .0740 .0539 .0751 .0506 .0476 .0397 .0345 .0310 .0327 157.500 .1408 .1580 .0917 .0876 .056B 161.000 .1593 .0589 .0897 166.000 .0359 .0217 .0527 .0346 .0317 180.000 . 1904 .1202 .0900 .0760 .0980 .0856 .0672 .0506 .1918 .0337 .0503 197.000 .0828 .0397 210.000 .0559 .0479 .0962 220.000 .0578 .0467 232.000 X/LT .9250 .9370 .9750 .9350 THETA

PAGE 185

210.000

550.000

232.000

.1028

(RQ3TEB) UPWT 1059 (IH4) 01-T22-58N16 EXTERNAL TANK 3.700 MACH (1) =ALPHA (1) = -10.000DEPENDENT VARIABLE CP/CPS SECTION (1) EXTERNAL TANK X/LT .9250 .9350 .9370 .9750 THETA 151.000 .0370 180.000 .0299 -.0280 .0325 210.000 1.7839 3.0000 CPSTG Q(PSI) = 3.1538RN/L MACH (1) = .32910 3.700 ALPHA (2) = -5.000 PINE DEPENDENT VARIABLE CP/CPS SECTION (1) EXTERNAL TANK .4000 .3750 .3000 .3350 .3500 .2500 .2750 .3250 X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 THETA .0016 .0209 .000 .2634 .1416 -.0115 45.000 -.0204 -.0364 -.0118 67.500 .0106 -.0174 .3759 -.0017 -.0102 -.0012 . 1394 90.000 .0597 .0175 .0116 112.500 .0047 .0116 .0298 .0002 -.0100 .0199 135.000 .0423 157.500 .0491 167.000 .0103 .0509 .0075 .0079 .2768 .0970 .0099 180.000 .9815 .6520 .5926 .4345 .0296 .0086 197.000 .2799 .0980 .0240 .0939 210.000 .0003 220.000 .0268 225.000 .0595 232.000 .9000 .6500 .7000 .7500 .8000 .8500 .8750 X/LT .5250 .5500 .5750 .6000 .4250 .4500 .4750 .5000 THETA -.0!88 .000 -.0074 -.0006 -.0169 45.000 -,0316.0020 -.0317 -.0249 -.0183 -.0164 67.500 -.0438 -.0308 -.0077 .0067 90.000 -.0260 -.0297 -.0273 -.0060 .0110 .0093 .0036 .0229 .0138 .0146 .0255 .0527 .0581 .0479 .0383 112.500 -.0038 -.0014 .0129 .0212 .0157 123.000 .0326 .0247 ,0200 .0143 .0557 .0364 .0241 .0194 135.000 .0503 .0031 .0026 -.0013.0942 .0116 .0038 .0348 .0289 157.500 .1039 .0615 .0866 .0388 .0441 161.000 .1131 .1031 .0350 166.000 -.0051 -.0083 .0071 180.000 .1550 .1550 .0997 .1062 .0368 .0643 .0664 .0455 .0331 .0312 .0148 .0025 .0279 197.000 .0918

.0443

.0255

.0152

.0110

UPWT 1059 (IH4) 01-TE2-SBN16 EXTERNAL TANK

(ROSTEB) MACH (1) = 3.700 ALPHA (2) = -5.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0128 .0069 151.000 -.0363 -.0076 180.000 210.000 .0029 1.7839 3.700 Q(PSI) = 3.1538RN/L 3.0000 MACH (1) = ALPHA (3) = PINF .32910 DEPENDENT VARIABLE CP/CPS SECTION (1) EXTERNAL TANK .4000 .3750 .3250 .3350 .3500 X/LT .2000 .2500 .2750 .3000 .0000 .0050 .0100 .0400 .0800 .1500 THETA .0201 .000 .3434 .2025 .0570 .0009 45.000 .0022 .0105 -.0211 67.500 .1036 .3939 .0164 -.011790.000 -.0053 .0003 .0005 .0169 -.0178 .0006 .0030 -.0015 112,500 -,0205 -.0021 -.0005 .0030 135.000 .0076 157.500 .0265 167,000 .0097 .0293 .0560 .0042 .0055 .0052 180.000 ,4976 .3482 .2055 .0039 .9806 .5437 .0579 .0069 197.000 .2095 -.0044 .0580 210.000 -.0141 220.000 .0059 225.000 .0159 232.000 .9000 .8750 .6000 .6500 .7000 .7500 .8000 .8500 X/LT .4250 .4500 .4750 .5000 .5500 .5750 THETA -.0086 .000 -.0017 .0002 .0094 -.0151 45.000 .0397 -.002B .0009 .0007 -.0041 67.500 -.0310 -.0169 .0190 -.0034 .0301 -.0106 90.000 -.0307 -.0344 -.0288 -.0035 -.0014 -.0057 .0050 .0137 .0263 .0217 .0155 112.500 -.0280 . --.0293 -.0203 -.0099 .0012 .0090 .0038 123.000 .0013 .0100 .0023 .0010 .0032 .0007 135.000 .0089 .0276 .0124 .0103 -.0160 -.0177-.0164 .0438 .0280 .0196 .0041 -.0034 157.500 .0090 .0372 .0606 .0396 161.000 .0493 166.000 .0692 .0109 .0030 -.0105 -.0192 -.0244 .0322 .0142 180,000 .0937 .1140 .0951 .0747 .0221 .0303 .0461 -.0135 197.000 .0699 .0072 -.0090 210.000 .0182 .0015 220.000 .0362 .0074 .0075 232.000

OR POOR QUALITY

220,000

232.000

-.0040

UPWT 1059 (1H4) 01-T22-S9N16 EXTERNAL TANK (RQ3TBB) MACH (1) = 3.700 ALPHA (3) =SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0032 151.000 -.0054 180.000 -.0275 -.0410 210.000 -.0112 MACH (1) = 3,700 ALPHA (4) = 5.000 PINE . 32910 Q(PSI) = 3.1538RN/L 3.0000 CPSTG 1.7839 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT ,0000 .0050 .0100 .0400 .0800 .1500 0000. .2500 .2750 .3000 .3250 .3350 .3500 .3750 ,4000 THETA .000 .4316 .2732 .0943 .0402 45.000 -.0161 67.500 .0132 .0490 .0100 90.000 **-.0015 -.0055** -.0004 . 1243 .4078 .0223 -.0093 112.500 . 0354 -.0344 -.0071 -.0098 -.0103 135.000 -.0133 -.0074 -.0136 -.012B 157.500 .0019 167.000 -.0026 180.000 .9798 .4490 .4053 .2713 . 1447 .0229 -.0142 -.0057 -.0057 -.0068 -.0057 .0136 197,000 .0257 .1493 -.0030 210.000 .0286 -,0033 220.000 -.0106 225.000 -,0071 232.000 -.0199 X/LT .4250 .4500 .4750 .5000 .5250 .9500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000 THETA .000 .0145 .0057 45.630 .0081 .0048 .0111 67.500 ~.0047 .0011 .0025 .0059 .0124 .0177 .0238 90.000 -.0243 -.0299 -.0293 .0170 .0309 -.0207.0185 .0307 .0238 112.500 -.0384 ~.0384 -.0334 .0223 .0058 .0198 .0182 -.0154 .0196 .0110 123.000 .0049 .0012 .0059 135.000 -.0259 -.0194 -.0165-.0030 -.0025 -.0055 .0008 -.0030 -.0028 -.0005157.500 -.0016 .0098 .0301 .0232 .0057 .0013 -.0123 -.0204 -.0123 .0291 .0035 161.000 .0053 166.000 .0477 .0096 180.000 .0602 .0998 .0877 .0981 .0353 -.0030 -.0176 .0584 .0482 .0133 .0102 -.0114 -.0155 -.0216 197.000 .0301 -.0053 .0034 210.000 .0188 -.0098

-.0277

.0003

'ABULATED SOURCE DATA - IH4

UPWT 1059 (IH4) 01-T22-S8N16 EXTERNAL TANK

(ROSTED)

MACH (1) = 3.700 ALPHA (4) = SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0365 151.000 .0057 180.000 -.0072 -.0302 210.000 -.0038 MACH (2) = 4.600 ALPHA (1) = -10.000PINF **≈ .**'6570 Q(PSI) ≈ 2.4551 RN/L 3.0050 CPSTG 1.8033 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .0400 0000. .0800 .1500 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000 THETA .000 .1694 .0791 .0006 -.0069 45.000 -.0269 67.500 -.0099 -.0194 -.023B 90.000 .0011 .0003 .0058 .1214 .3782 .0235 .0000 112.500 .0303 .1014 .0204 .0279 .0571 135.000 .0258 .0418 .0391 .0184 157.500 .0605 167.000 .0715 180.000 .9037 .6202 .4841 .3305 .1375 .0608 .0360 .0443 .0518 .0562 .0719 197.000 .3269 .1355 .0430 210.000 .1278 .0391 220.000 . 0251 225.000 .0465 232.000 .0347 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000 THETA .000 -.0090 -.0116 45,000 -.0274 --0244 -.0147 67.500 -.0249 -.0137 -.0224 -.0225 -.0196 -.0190 -.0101 90.000 -.0021 .0041 --.0014 .0227 .0339 .0265 .0140 .0114 .0109 112.500 .0330 .0367 .0415 .0587 .0744 .0747 .0599 .0496 .0426 .0367 123.000 .0376 .0355 .0395 135.000 .0480 .0997 .0721 .0528 .0384 .0490 .0566 .0487 .0422 .0359 157.500 .0890 .1200 .0815 .0876 .0688 .0400 .0477 .0497 .0391 .0366 .0358 .0303 161,000 .1021 166.000 .0964 .0508 180.000 .1222 .1694 . 1283 .0999 .0885 .0579 .0522 .0470 .0296 .0564 .0425 .0393 .0296 .0286 197.000 .0942 .0501 .0335 210.000 .0589 .0432 220.000 .0920 .0450 232.000 .0584 .0455

PAGE 169

UPWT 1059 (1H4) 01-T22-SBN16 EXTERNAL TANK

(RQ3TEB)

MACH (2) = 4.600 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0362
151.000 .0386
180.000 .0255 -.0152
210.000

MACH (2)	= 4.8	500 AL	.PHA (2) =5.	000 P	INF =	. 16570	Q(PS	1) = 2.	4551	RN/L	3.005	o CPS	STG =	1.8033
SECTION (1)EXTER	NAL TANK			DEPENDE	NT VARIA	BLE CP/C	PS							
X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000 157.500 167.000				.2525	.1390	.0261	.0046	.0009	.0057 .0125	0031 .0801 .0179	.3973 .0193 .0230		0045 .0285 .0560 .0257	.0026	.0072 0081 0164 .0009 .0227 0021 .0292
180.000 197.000 210.000 220.000 225.000 232.000	.9828	.6179	.5693	.4182	.2658 .2670	.0918 .0928 .0894	1950.	.0143		.0279 .0283		.0265	.0270	.0380	.0463 .0261 .0055
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.3750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500		0099 .0043		0239 0154 .0071		0150 .0071		0035 0207 0117 0074 .0188	0189	0200 .0195 .0368	0163 .0166 .0486	0048 0179 0157 .0106 .0402	.0079 .0306 .0255	.0230	.0006 .0045 .0146 .0254
135.000 157.500	.0441	.0217 .0892	.0638	.0366 .0734		.0570 .0489		.0346 .0172	.0194 .0304	.0233 8850.	.0222 .0168	.0245 .0106	.0240 .0063		.0205 .0028
161.000 166.000 180.000 197.000 210.000 220.000	.0673 .0752	.1378	.1168	.0787 .0923 .0734	.0682	.0550	.0305	.0159	.0403	.0350 .0275 .0299	.D254	.0192	.0051		-,0005 _0049
232.000								.0338		. 3201		.0188			

(-)

220.000

232.000

(RQ3TEB) UPWT 1059 (1H%) 01-122-58N16 EXTERNAL TANK ALPHA (2) = MACH (2) =4.,600 DEPENDENT VARIABLE CP/CPS SECTION (I) EXTERNAL TANK X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0241 151.000 .0117 -.0078 -.0275 180.000 .0051 210.000 1.8033 3.0050 CP5TG .16570 Q(PSI) = 2.4551RN/L MACH (2) = 4.600 ALPHA (3) = .000 PINF SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 .3350 .3500 .3750 X/LT .0000 .0050 .0100 .0400 .0800 . 1500 .2000 .2500 .2750 .3000 .3250 **THETA** .0188 .000 .2031 .0557 .3442 -.0065 45.000 -.0059 .0216 .0101 67.500 .0036 90.000 .0048 .0016 .0067 .0641 .3620 .0318 -.0048 112.500 .0064 .0084 .0030 .0220 135.000 157.500 .0077 .0026 -.0065 -.0062 .0155 .0190 167.000 .009B .0105 .0107 .0094 .2000 . 0550 180.000 1.0007 .5360 .4913 .3417 .0097 .0094 .0575 .0111 197.000 .2038 .0024 210.000 .0583 -.0011 220.000 225.000 .0120 .0089 232.000 .9000 .8000 .8500 .8750 .7000 .7500 X/LT .4500 .4750 .5000 .5250 .5500 .6000 .6500 THETA -.0009 .000 .0000 .0067 45.000 -.0070 -.0020 .0203 67.500 -.0174 -.0048 -.0065 -.0031 -.0018 -.0039 .0013 .0012 .0051 .0051 .0156 90.000 -.0143 -.0137 -.0093 -.0171.0203 .0208 .0182 112.500 -.0150 -.0039 -.0033 .0056 .0175 -.0137 -.0147 123.000 .0128 .0107 .0106 .0047 .0020 .0030 135.000 .0203 .0040 .0210 .0224 .0114 .0144 .0050 .0060 .0025 -.0101 .0120 .0347 .0097 .0290 .0150 -.0052 157.500 .0304 .0417 .0378 .0356 161.000 166.000 180.000 .0732 .0149 .0509 .0929 .0527 .0059 .0250 .0419 .0122 .0168 .0081 -.0041 -.0073 .1113 .0745 .0483 197.000 .0640 .0139 -.0055 .0029 .0170 210.000

.0094

.0159

.0001

UPNT 1059 (IH4) 01-122-S8N16 EXTERNAL TANK

(RQ3TBB)

MACH (2) = 4.600 ALPHA (3) = .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA .0113 123.000 151.000 .0025 180.000 -.0140 -.0275 210.000 -.0039 3.0050 CPSTG = 1.8033 RN/L MACH (2) = 4,600 ALPHA (4) = Q(PS1) = 2.4551 5.000 × .16570 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .4000 .3500 .3750 X/LT .3000 .3250 .3350 .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 THETA .0480 .000 .4343 .2002 .0914 45.000 **-.0045** .0567 .0196 67.500 .0196 .0057 .0349 90.000 .0042 -.0001 .0057 .0808 .3552 -.0174 .0152 .0006 112.500 -.0007 -.0024 -,0062 -.0055 -.0031 135.000 -.0018 157.500 .0090 .0050 167.000 .0254 .0006 -.0007 -.0011 .0116 180.000 1.0032 .3983 .2625 .1398 -.0055 .0011 .4418 197.000 . 1440 .0283 .0037 .0006 .0307 210.000 -.0016 220.000 -.0011 225.000 -.0099 232.000 .8750 .9000 X/LT .7500 .8000 .8500 .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 THETA .000 .0181 .0103 45.000 .0091 .0197 .0095 67.500 .0088 .0099 .0265 .0040 .0096 .0058 .0068 .0367 .0211 90,000 -.0082 -.0137 -.0106 -.0101 -.0002 .0059 .0154 .0261 .0075 .0163 .0158 112.500 -.0177-.0060 .0025 -.0187 -.0171 -.0072 .0076 123.000 .0105 .9179 .0003 -.0031-.0029 .0037 135.000 -.0103 -.0187-.0187 -.0093 .0020 .0038 -.0089 157.500 .0002 .0041 .0129 .0063 .0125 .0107 .0028 -.0051 -.0062 .0063 .0305 161.000 .0076 166.000 .0691 .0150 -.0011 -.0052 -.0094 .0182 .0032 .0518 .1070 .0317 .0050 .0442 .0150 180.000 .1108 .0518 -.0044 197.000 .0115 .0256 210.000 .0157 -.0019 .0085 220.000 -.0007 .0014

-.0125

PAGE 193

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

UPWT 1059 (1H4) 01-T22-S8N16 EXTERNAL TANK

(RQ3TBB)

MACH (2) = 4.600 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370

THETA 123.000 151.000 190.000 210.000 .0376

.0103

-.0110 -.0210 -.0015

315.000

PAGE 194

(15 APR 76)

(RQ35BB)

UPWT 1059 (IH4) 01-Ta2-SBN16 SOLID RCKT. BSTR.

.0956

.1741

.4481

REFERENCE DATA PARAMETRIC DATA SREF = 2690.0000 SQ.FT. .000 RN/L 3,000 BETA XMRP = .0000 INCHES = 1290.3000 [NCHES LREF YMRP = .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 RN/L = 3.0000 CPSTG = 1.7839 ALPHA (1) = -10.000 PINF .32910 Q(PS1) = 3.1538MACH [1] =3.700 = DEPENDENT VARIABLE CP/CPS SECTION (1) SOLID RCKT. BSTR .4000 .2000 .3000 .5000 .6000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 . 1500 -.0355 90.000 .0977 .0911 .0950 1.1376 .0917 180.000 .2403 .0527 .2754 .0624 225.000 .0673 .0990 247.500 .0224 .0818 .0707 .0519 .9857 260.000 .0170 .0006 -.0128 .0181 270.000 .2860 .1055 .0732 -.0082 -.0203 -.0137.1737 .1807 .5884 315.000 -.0461 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9500 .9900 P5 I -.0436 -.0146 -.0240 90.000 →.0355 .0033 .0794 180.000 .0312 .1649 -.0107 .0216 .1176 .0429 .2330 210.000 .0302 .0587 .0195 215.000 .0197 -.0271 -.0402 225.000 .1273 .0195 -.0202 .0146 -.0054 240.000 -.0256 -.0273 -.0265 247.500 .0315 270.000 -.0083 .2453 -.0268 -.0355 .0404 315.000 -.0357 = 3.0000 CPSTG = 1.7839MACH (]) = Q(PSI) = 3.15383.700 ALPHA (2) =-5.000 PINF .32910 RN/L SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .0000 .0500 ,2000 .3000 .4000 .5000 .6000 .0040 .0250 .1000 .1300 . 1500 .0750 .1100 .1150 -.018390.000 1.1782 .1027 .1011 .1025 -.0027 180.000 .2002 . 1687 .0124 .0509 225.000 .0135 . 0594 .0466 247.500 +.0112 .0270 .0493 260.000 .5291 270.000 .2889 .1818 .1076 -.0182 -.0309 -.0176 .0036 -.0027

-.0107

-.0092

-.0455

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01-T22-S8N16 SOLID RCKT. BSTR.

(RQ3SBB)

PAGE 193

				UPW	11 1028 (1	(H4) U1-	185-28VI	0 20510	HCKI. BE	in.		trus	그다다!		
MACH (1) = 3.	700 A	LPHA (6	?) = -5	i.000				·		Is				
SECTION	(1)SOLID	RCKT. B	STR		DEPENDEN	IT VARIA	BLE CP/C	PS							
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9500	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000 247.500 315.000	.0153 .0153	.0209 .1271 .1081	0352 0253 .0001	.0030 0256 0306	.0082	.2089	.0128	.0004 .1050 .0600 .0004 0203	0305	•008 4	.0799 0417 0057 0132	.0093 .0397 0054			
MACH (1) = 3.	700 A	LPHA (3	;) =	.000 PI	INF #	.32910	Q(PS	1) = 3.1	538	RN/L	= 3.000	O CP	STG =	1.7839
SECTION	(DSOLID	RCKT. E	STR		DEPENDEN	NT VARIA	BLE CP/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	 		.1052	.1329		.1062 .1061				.0012	0128	0301	0054 0198 0109 0022	.0196	.0357 .0281
260.000 270.000 315.000	İ	.2944	. 1874	.1105	.1181	. 1773	.4251	.4906	0100	.0134	0195	0330 0301	0122	0083	0083
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000	.0081	.1004 .1240	0213 0257 0097	0018	0033	. 1530	.0004	.0583 .0821 .0609	0332	.0128	.0964 0424 0099	.0570			
240.000 247.500 270.000 315.000	.0088 0030	.2104	0228	0332				0201			0184	0036			

ORIGINAL PAGE IS

DATE EU ME	-K 76		TABULAT	ED SUUNC	E DATA	1114									200
				UPH	IT 1059 (IH4) 01-	T22-58N1	6 SOLID	RCKT. E	BSTR.		(RQ3	(888)		
MACH (1)	= 3.7	700 A	LРНА (4) = 5	.000 P	INF =	.32910	Q(PS	1) = 3.	1538	RN/L	= 3.000	O CPS	STG =	1.7839
SECTION	(DSOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	P5							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 285.000 247.500 260.000	1.1766		.1032	.1047 .0777		.1066 .0619		.5320		0186	0334	0391	0159 0162 0154 0218	.0157	.0231 .0271
270.000 315.000		.2962	. 1888	.1102	.1088	.1817	.4217		0093	0071	0178	0300 0061	0271	.0035	.0269
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9480	.9500	.9600	.9900			
PS1 90.000 180.000 210.000	.0000 .0035	.0869 .0647	0149 0192	.0313	.0155	.2106		.0582 .1085 .0602		. 0252	.0985	.0635 .0667			
215.000 225.000 240.000 247.500	.0146	.1142	0226	0173			.0034	.0179 0005	~.0279	·	0367 .0119 0056	0087			. '
270.000 315.000	.0154 .0067	. 1960	0232	0333				0120				.0408			
MACH (2) = 4,8	500 A	LPHA (1) = -10	.000 P	INF: #	.16570	Q(PS	ii = 2.	455 I	RN/L	= 3.005	io CP:	STG =	1.0033
SECTION	(1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS	•						
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	1.2185		.0949	.0859 .2724		.0896 .2337			,	. 0624	.0415	.0220	0240 .0422 .0873 .0627	.0774	.0480 .0460
260.000 270.000 315.000		.2981	. 1847	.1082	.0824	. 1831	.2692	.4470	.0032	0019	.0003	0046 0275	.0090	.0268	.0108
X/LSRB	7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000	0269 .0337	.0292 .1483	0209 0015	.0298	.0383	.2154	onen	.0045 .1102 .0775		.0339	8501.	0077 .0671			
225.000 240.000		.1338	.0288	0031			.0259	.0163	0112		0211 0064 0155	0081		•	

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 PAGE 197

(RQ3SBB) UPWT 1059 (1H4) C1-T2E-S8N16 SOLID RCKT. BSTR. 4.600 ALPHA (1) \simeq -10.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .9300 .9500 .9600 .9900 .9250 .9400 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 PSI 247.500 .0323 270.000 -.0247 .0420 .0032 .2078 -.0114 -.0242 315.000 -.0221 CPSTG = 1.8033 Q(PSI) = 2.4551RN/L 3.0050 MACH (2) = 4.600 ALPHA (2) = -5.000 · PINF = .18570 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .6000 .3000 .4000 .5000 .1300 .1500 .2000 X/LSRB .0000 .0500 .1000 .1100 .1150 .0040 .0250 .0750 PS1 -.0112 90.000 1.3346 .1021 .0990 .0999 .0108 .0009 180.000 .2086 .1711 .0406 .0317 .0111 225.000 .0406 -.0042 .0111 .0443 247.500 260.000 . 3340 -.0161 -.0130 .0097 .0053 -.0041 270.000 .3290 .2031 .1151 .1019 .1771 .2719 .0033 .0037 -.0282315.000 .9300 .9400 .9500 .9600 .9900 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 PSI .0076 .0086 90.000 -.0117 .0408 -.0195 .0849 .0103 .0630 .0563 180.000 .0847 -.0094 .0206 .1742 .0605 .0180 210.000 .0162 -.0226215.000 .3273 -.0146 .0035 -.0066 225.000 .0997 .0135 -.0094 -.0171 -.0071 240.000 -.0137 .0277 247.500 .0408 -.0184 270.000 .0022 .2001 -.0094 -.0211 315.000 -.0117 CPSTG = 1.8033 Q(PSI) = 2.4551RN/L = 3.0050 4.600 MACH (2) = ALPHA (3). = PINF . 16570 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .6000 .5000 .1150 .1300 .1500 .2000 .3000 .4000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 PSI -.0030 .1078 .1062 .1059 90.000 1.3783 -.0147~.0045 180.000 .1388 .1078 .0221 -.0033 -.0133 225.000 .0238 -.0157 -.0102 .0122 247.500 260.000 .3642 .0240 -.0031 -.0191 -.0160 -.0089 -.0079 .3392 .2133 .1209 . 1248 .1683 .2810 .0038 270.000

UPWT 1059 (1H4) 01-122-58N16 SOLID RCKT. BSTR.

(RQ3SBB)

MACH (2)	= 4,6	700 1	LPHA (3		.000		, <u>, , , , , , , , , , , , , , , , , , </u>	- 000.5							
				,, ≕											
SECTION (1120710	RCKI. B	SIR		DEPENDE	NT VARIA	ELE CP/C	P5							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 315.000				ř								0215			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			-
951 90.000 180.000 210.000 215.000	.0008 .0153	.0890 .880	0073 0073	.0080	.0041	.1165	.0044	.0486 .0482 .0423	0199	.0078	.0703	.0417 .0563			
225.000 240.000	2222	.1112	.0133	0129				0070 0177			0150 0211	0117			
247.500 270.000 315.000	.0200 0021 0031	.1596	0137	0217				0192				.0404			
MACH (2)	= 4.6	500 A	LPHA (4	-) = 5	.000 P	INF =	. 16570	QIPS	i) = 2.	4551	RN/L	= 3.005	O CP	STG =	1.8033
SECTION (DSOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LSR8	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PS! 90.000 180.000 225.000 247.500	1.3522		.1024	.1005 .0834		.1017 .0680				0090	0215	0174	0125 0092 0143 0146	0119	.0146 .0109
260.000 270.000 315.000		.3409	.2151	.1210	. 1074	.1863	.2923	.3790	.0064	.0068	0018	0167 .0003	0157	0123	.0037
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000	0081	.0731 .0332	0074 0106	.0267	.0119	.2107		.0453 .0901 .0633		.0211	.0739	.0493 .0459		•	·
215.000 225.000 240.000	0100	.1169	0090	0100		, ,	.0199	.0106 0137	0156		0239 0042 0109	0018		•	
247.500 270.000 315.000	.0180 .0177 .0071	.2064	0102	0213				0201				.0411			

TABULATED SOURCE DATA - 1974

PAGE 159 ORBITER FUSELAGE (ROSECA) (15 APR 76) UPHT 1059 (IH4) OI ALONE PARAMETRIC DATA REFERENCE DATA .000 SREF = 2590.0000 SQ.FT. LREF = 1290.3000 INCHES BREF = 1290.3000 INCHES .0000 INCHES RN/L 1.200 BETA YMRP .0000 INCHES ZMRP .0000 INCHES SCALE = .0100 CPSTG = 1.7063MACH (1) =2.360 ALPHA (1) = .000 PINE = .48157 Q(PSI) = 1.87751.2100 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1000 .1700 .1750 .1800 X/LB .0400 .0600 .0800 . 1250 .1500 .1600 .1650 .0000 .0050 .0200 .0500 PHI .0747 .0328 .0125 .000 .9962 .5350 .2042 .1182 .0494 10.000 .0307 20.000 .0323 .0333 24.500 39.000 .3993 163.000 .6664 174.000 .6433 .5645 180.000 .9962 .2593 .2067 .2053 .2390 .6258 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 ,6000 .7800 .8000 .8050 .8290 .8620 .9500 .9750 PH1 +.0312 -.035% .000 .0064 .0095 .0247 .0204 .0202 .0122 -.0248 23.000 .0075 24.000 .0116 31.500 .0157 33.100 .0054 35.000 .0162 40.000 .0183 .0007 45.000 -.0029 50.000 .0431 .0230 51.600 57.000 -.0047 60.900 -.005265.000 +.0113 69.000 -.0110 69.000 -.0156 79.300 -.0118 95.500 -.0060.0008 95.700 -.0267 96.300 .0498 103.000 -.0041 -.0665 105.000 112.600 -.0020 -.0086 117.500 -.0054 .1137 120.800 . 1999 127.900 129.500 .2185

PAGE 200 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 UPWT 1059 (1H4) 01 ALONE ORBITER FUSELAGE (RQ38CA) MACH (1) = 2.360 ALPHA (1) = .000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS 1.0000 1.0145 X/LB .9630 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .0290 . 8620 .9500 .9750 PHI 130.000 .1642 .0396 .0202 135.000 -.0670 -.0060 139.600 .1723 144.000 .0532 .1483 155.000 180.000 .0612 -.0170-.0112 X/LB 1.0250 1.0500 PHI .000 -.0343 -.0372 CPSTG = 1.7063Q(PSI) = 1.8775■ 1.2100 MACH (1) = 2.360 ALPHA (2) = 5.000 PINF **+** .48157 RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .0050 .0200 .0400 .0500 .0800 .1000 . 1250 .1500 .1600 .1650 .1700 .1750 .1800 .0600 PHI .000 1.0028 .2773 .1787 .1273 .0957 .0740 .0472 .6278 10.000 .0719 20.000 .0735 24.500 .0740 39.000 .0879 .3365 163.000 .5704 174.000 1.0028 .4880 .5338 .4717 180.000 .1948 .1476 .1487 .1762 1.0000 1.0145 X/LB .9530 .9750 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 ,8620 .9500 PHI .000 .0343 .0322 .0368 .0030 -.0033 -.0095 .0397 .0339 .0398 .0317 23.000 24.000 .0410 31.500 .0467 .0338 33.100 35.000 .0487 40.000 .0534 .0348 45,000 .0384

50.000

51.600 57.000

60.900

65.000

68,000

.0590

-.0099

-.0114

-.0110

-.0137

-.0337

DATE 20 APR 76 UPWT 1059 (1H4) OI ALONE (RQ3BCA) ORBITER FUSELAGE

				Or M	, 1032 ,	TULL! OT	HE ME	OVETIO	in roace,	402		(NGDD	CHI		
MACH- (1)	= 2.	360 At	S) AHG	= 5	.000				•		=+				
SECTION (1)ORBIT	ER FUSELA	\GE		DEPENDE	NT VARIA	BL: CP/C	PS .							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI 69.000 79.300 95.500 95.700 96.300	.0571	0124			0337 0312		0238								
103.000 105.000	•				0320										0770
112.600 117.500 120.800					0326				.0891			0280		0303	
127.900						.1042									
129.500 130.000 135.000		0847			0223			.1487	.1282	.0244		.0025			•
139.600 144.000									.1195			.0245			
155.000 180.000	.1199 .0254	0555			0212					_					
X/LB	1.0250	1.0500									3				
PH1 .000	0046	0122									جديد المع	. ,			
MACH (1)	= 2.	360 AL	PHA (3)	= 10	.000 P	INF =	.48157	Q(PS)	1) = 1.6	9775	RN/L _ =	1.2100	CP	STG =	1.7063
SECTION (DORBIT	ER FUSEL#	4GE		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LĐ	.0000	,0050	.0200	.0400	.0500	.0600	0800	.1000	. 1250	. 1500	.1600	.1650	.1700	.1750	.1800
PH1 .000 10.000 20.000 24.500 39.000	.9934	.7164	.3591	.2482		.1901	1469	.1263 .1226 .1226 .1180 .0885		.0912					·
163.000 174.000												.4437		.2751	
180.000	.9934				.1315			.0909	.1051	. 1200	. 3344	.7757	.4270		.3815
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	8000	.8050	.8290	.8820	.9500	.9830	.9750	1.0000	1.0145
PHI .000 23.000	.0710	.0649 .0638	.0729	.0707	.0686		:0807				.0394		.0331	.0263	

OF POOR QUALITY

PAGE 201

UPWT 1059 (IH4) OI AL(NE

ORBITER FUSELAGE

(RQ3BCA)

MACH (1) = 2.360 ALPHA (3) = 10.000

SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	s							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	. 8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 24.000 31.500 33.100	.0757	.0659													
35.000 40.000	.0793 .0772	. 0654							•				•	•	
45.000 50.000 51.600	.0638	.0710			٠								0753		•
57.000 60.900 65.000		0199 0204 0208											0607		
68.000 69.000 79.300		0210			0417								0007		
95.500 95.700 96.300	.0530	0216	·		0409		0554								۵
103.000 105.000 112.600					0449 0544										0909
117.500 120.800 127.900					0311	.0178			.0845			0481		0521	
129.500 130.000 135.000		0924			0598			.0593	.0648	0123		0214			
139.600 144.000 155.000	.1008								.0355			0132			
180.000	0028	0592			0235								. •		-
X/LB	1.0250	1.0500										•			
PH1 .000	, 0334	.0237						*							

180.000

-.0424

-.0795

TABULATED SOURCE DATA - 1H4

-.0563

PAGE 205 (RQ3BCA) UPWT 1059 (1H4) OI ALONE ORBITER FUSELAGE □ 1.7063 2.360 ALPHA (4) = 20.000 PINF .43157 Q(PSI) = 1.8775RN/L 1.2100 CPSTG SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .1750 .1800 .0050 .0200 .0488 .0500 .0600 . 3800 .1000 .1250 .1500 .1600 .1650 .1700 PHI .000 .2571 .2517 .9344 .8721 .5435 .4093 .3379 . 2875 .2098 20.000 .2436 24.500 39.000 163.000 .0830 .0732 174.000 .150B 180.000 .9344 .0443 .0365 .0472 .0549 .0826 .2358 .2374 X/LB .2000 .3000 .5000 .8050 .8290 .9500 .9630 .9750 1.0000 1.0145 .4000 .6000 .7800 .9000 .8620 PHI .000 .1780 .1601 .1541 .1777 .1781 .1906 .1397 .1311 .1175 23.000 . 1549 24.000 31.500 33.100 .1726 .1601 .1518 35.000 40.000 .1507 .1394 .1161 45.000 .1332 50.000 .0509 51.600 57.000 -,1099 -.0592 50.900 -.0393 65.000 68.000 -.0340 -.1128 69.000 -.0315 79.300 -.1005 95.500 95.700 96.300 -.0529 -. 107 -.0330 .0242 103.000 -.0554 105.000 -.1016 112.600 -.0635 117.500 120.800 127.900 -.0836 -.0819 .0374 -.0046 129.500 .0284 130.000 -.0617 -.0726 .0099 135.000 -.1010 -.0863 139.600 .0000 144.000 -.0762 155.000 .0160

UPWT 1059 (1H4) OI ALONE

ORBITER FUSELAGE

.0992

(RQ3BCA)

MACH (1) = 2,360 ALPHA (4) = SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 . 1357 . 1221 1.2100 MACH (2) = 2.950 ALPHA (1) = .000 PINF .26532 Q(PS1) = 1.6163RN/L CPSTG = 1.7529**#** SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0400 .1800 .0000 .0050 .0200 .0500 .1000 . 1500 .1600 .1650 .1700 .1750 .0600 .0000 .1250 PHI .000 1.0086 .5261 .1984 .0705 .0532 .1117 .0306 .0114 10.000 .0282 20.000 .0294 24.500 39.000 .0323 .0729 163.000 .3898 174.000 .6556 .5945 180,000 1.0086 .2472 .1916 .1883 .2206 .5633 .6386 X/LB .2000 .3000 .4000 .9750 1.0000 1.0145 .5000 .6000 .7800 .8000 .8050 .9290 .8620 .9500 .9630 PHI .000 .0039 .0027 .0017 .0027 -.0013 .094 -.0177 -.0225 -.0245 23.000 .0015 24.000 .0091 31.500 .0126 33.100 .0015 35.000 .0126 40.000 .0149 -.000845.000 -.0019 50.000 .0369 51.600 .0194 57.000 .0015 60.900 .0003 65.000 68.000 .0001 -.0075 69.000 -.0070 79.300 -.0075 95.500 -.0047 -.0051 95.700 -.0139 96.300 103.000 .0522 -.0044 105.000 -.0552 112.600 -.0054 .0034 117.500 .0045

جن

60.900

-.0011

PAGE 205 TABULATED SOURCE DATA - 1H4 (RQ3BCA) UPHT 1059 (IH4) 01 ALONE ORBITER FUSELAGE MACH (2) = 2.950 ALPHA(1) =.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .9750 1.0000 1.0145 .8290 .9630 X/L8 .8050 .8620 .3000 .4000 .5000 .6000 .7800 .8000 PHI 127.900 .1248 .1506 129.500 130.000 .1323 .0409 .0097 135.000 -.0389 -.0101 139.600 .1506 144.000 .0201 155.000 . 1583 180.000 .0978 -.0158 -.0147X/LB 1.0250 1.0500 PHI .000 -.0260 -.0279 CPSTG = 1.7529**1.2100** MACH (2) =2.950 ALPHA (2) = 5.000 .26532 Q(PSI) = 1.6163RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .1250 .1500 .1600 .1650 .1700 .1750 .1800 .0050 .0200 .0400 .0500 .0600 .0800 .1000 PHI .000 .0558 1.0071 .6175 .2658 . 1648 .1161 . 1034 .0841 10.000 .0809 20.000 .0822 24.500 .0835 39.000 .0976 .3062 163.000 .4916 174.000 .3966 .4658 .4985 180.000 1.0071 .1770 .1275 .1308 .1529 1.0000 1.0145 .9750 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 PHI .0345 .0041 -.0012 -.0044 .000 .0409 .0364 .0287 .0256 .0271 23.000 .0364 24.000 .0474 31.500 .0525 33.100 .0403 35.000 .0545 40.000 .0596 .0416 45.000 .0461 50.000 .0635 -.0331 51.600 57.000 -.0011

DATE 20 AF	R 76		TABULATE	ED SOURC	E DATA -	IH4								PAGE	206
				บคพ	T 1059 (IH4) O1	AL INE	ORB I TE	in FUSELA	AGE		(RQ38	3CA)		
MACH (2)	= 2.	.950 AI	LPHA (21) == 5	.000										
SECTION (1)ORBII	TER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	°S						•	
X/LB	.2000	.3000	.4000	.5008	.6000	.7800	. 8000	.8050	.8290	.8620	.9500	,9630	.9750	1.0000	1.0145
PHI 65.000 68.000 69.000 79.300 95.500 96.300 103.000 112.600 117.500 120.800	. 0580	0008 0082 0156			0205 0208 0235 0279	. 0594	- 0178		.0882		,	0117	0151	0146	0592
129.500 130.000								.1072	.1010	.0250		.0019			
135.000 139.600 144.000 155.000 180.006	.1179 .0584	0515			~.0249				.0859			.0137			
X/LB	1.0250	1.0500									•				
PHI .000	0039	~.0090											•		
MACH (2)	= 2.	950 AL	_PHA (3)	= 10	.000 P	INF =	.26532	Q(P51) = 1.8	5163	RN/L	= 1.2100	J CP:	STG =	1.7529
SECTION (1)ORB11	ER FUSELA	AGE		DEPENDE	NT VARIA	BLE CP/CF	°5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PH1 .000 10.000 20.000 24.500 39.000 163.000 174.000	.9980	.7092	. 3453	.2316		.1741	1389	.1160 .1125 .1131 .1102 .0825		.0937	٠.	.3147		.2063	
180.000	.9980				.1193			.0780	.0901	.1029	.2365		.3749		.3551

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PH1 000

.0197

.0115

PAGE 207 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (RO39CA) UPWT 1059 (IH4) OI ALCNE ORBITER FUSELAGE MACH (2) = 2.950 ALPHA (3) = SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145 .2000 .3000 .5000 .6000 .7800 .8000 .4000 PHI .0220 .0173 .0278 .000 .0655 .0555 .0583 .0606 .0589 .0680 23.000 .0549 24.000 31.500 .0679 .0702 33.100 .0573 35.000 .0702 40.000 .0685 .0585 45.000 .0632 50.000 .0549 51.600 -.0525 57.000 -.0097 60.900 65.000 68.000 -.0097 -.0126 -.0435 69.000 79.300 95.500 95.700 96.300 -.0138 -.0304 -.0283 -.0356 -.0159 .0449 -.0299 105.000 -.0632 112.600 -.0373 -.0337 117.500 -.0297 120.800 .0826 127.900 -.0103 129.500 130.000 .0245 .0567 -.0096-.0209 135.000 -.0561 -.0414 139.600 .0084 144.000 -.0040 155.000 .0746 180.000 .0251 -.0419 -.0278 X/LB . 1.0250 1.0500

				UPA	IT 1059 ((IH4) OI	ALO: 1E	ORBITE	ER FUSEL	AGE		(RQ3	ECA)		
MACH (2)	= 2.	950 AL	_PHA (4)	= 20	.000 F	INF =	.26532	Q(PS)	() = 1.	6163	RN/L	= t.210	D CP	STG =	1.7529
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDE	ENT VARIA	ABLE CP/CF	PS .						•	
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	. 1800	.1000	.1250	. 1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	.9334	.8708	.5294	.3958	.0416	. 3253	.2778	.2444 .2450 .2379 .2180 .0824	.0353	.2057	.0510	.0769	.1348	.0400	.1679
		7000	1.000			2000	0000		aann	ėenn.		.9630	.9750	1.0000	1.0145
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9030	יופז פ.	1.0000	1.0175
PHI .000 23.000 24.000 31.500 33.100	.1769 .1704 .1587	. 1587 . 1528 . 1487	. 1632	.1661	. 1683		.:834				. 1281		.1190	.1081	
35.000	. 1493														
40.000 45.000	.1147	.1398 .1317													
50.000	.0478														
51,600 57,000 60,900 65,000 68,000 69,000		0405 0220 0224 J239						-					0719		
79.300 95.500		071.5			0623 0351		0705				•				
95.700 96.300 103.000	.0235	0246			0322										0611
105.000 112.600 117.500 120.800			•	•	0404		٠		.0429		. •	0566		0595	
127.900 129.500						0326		.0367							
130.000									-0074	0444		0525			•
135.000 139.600 144.000 155.000	.0093	0628			0611				0270			0521			
180.000	0189	0495			0541								•		

-.0013

.0003

112.600

117.500

120.800

TABULATED SOURCE DATA - IH4

PAGE 200 (RQ3BCA) UPHT 1059 (1H4) 01 ALCHE ORBITER FUSELAGE 2.950 ALPHA (4) = DEPENDENT VARIABLE CP/CPS SECTION (1) ORBITER FUSELAGE X/LB 1.0250 1.0500 PHI .000 .1195 .1091 CPSTG = 1.7839= 1.2000 Q(PSI) = 1.2605RN/L MACH (3) =3.700 ALPHA (1) = -5.000 PINF - .13154 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 .1750 .1650 .1700 X/LB .0800 .1000 . 1250 .1500 .1600 .0000 .0050 .0200 .0408 .8500 .0600 PHI .0974 .0119 -.0032 .000 .9769 .4184 .1361 .0640 .0346 .0036 10.000 .0051 20.000 .0074 24.500 39.000 .0598 .4612 163.000 .7781 174.000 .7561 .9769 .6688 .7891 180.000 .3017 .2401 .2734 1.0000 1.0145 .9500 .9630 .9750 X/LB .6000 .8000 .8050 .8290 .8620 .2000 .3000 .4000 .5000 .7800 PHI -.0277 -.0269 -.0030 -.0250 .000 -.0078 -.0101 -.0105 .0072 .0067 23.000 -.0138 24.000 -.0093 31.500 -.0048 33.100 -.0138 35.000 -.0101 40.000 -.0123 -.0199 45.000 -.022950.000 .0232 .0188 51.600 57.000 .0048 60.900 .0048 65.000 .0048 .0067 68.000 69.000 .0048 79.300 .0035 95.500 .0035 .0064 .0038 95.700 98.300 .0498 103.000 .0035 -.0374 105.000

.0832

PAGE 210 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 ORBITER FUSELAGE (RO3BCA) UPWT 1059 (IHV) OI ALONE MACH (3) = 3.700 ALPHA(1) = -5.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS 1.0000 1.0145 X/LB .8050 .8290 .8620 .9500 .9830 .9750 .2000 .3000 .4000 .5000 .6000 .7800 .8300 PHI 127.900 .0534 129.500 .2236 .1542 .0458 .0003 130.000 135.000 .0035 .0000 139.600 .1757 -0111 144.000 155.000 .1975 180.000 . 1632 .0037 .0042 X/LB 1.0250 1.0500 PHI .000 -.0287 -.0301 3.700 .13.54 Q(PSI) = 1.2605RN/L 1.2000 CPSTG = 1.7839 MACH (3) = ALPHA(2) =.000 PINF SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 .0000 .0000 .1000 .1500 .1600 .1650 .1700 X/LB .0050 .0200 .0400 .0500 .0600 .1250 PHI .000 .9849 .5036 .1021 .0872 .0292 8820. .0054 .1874 .0641 10.000 20.000 .0255 24.500 39.000 .0285 .0626 163.000 .3621 .5962

.1704

.8050

.8000

.0059

.1688

.8290

.1980

.8620

.2274

.6000

-.0026

.7800

174.000

180.000

X/LB

PHI

.000

23.000

24.000 31.500

33.100

35.000

40.000

45.000

50.000

51.600 57.000

60.900

.9849

.2000

.0010

.0024 .0091

.0069

.0091

.0277

.3000

-.0020

-.0035

-.0013

-.0050

-.0057

.0018

.0006

.4000

-.0026

.5000

.0015

-.0042

.6339

.9750

-.0206

1.0000

-.0190

.4926

.9500

-.0172

.9630

.6141

PAGE 211

DATE 20 AP	H 16		IABULATE	D SOURCE	E DATA -	184								PAGE	211
				UPW	T 1059 ([H4) OI	ALONE	ORBITE	R FUSELA	AGE		(RQ3B	CAl		
MACH (3)	= 3.	700 AI	LPHA (2)	! =	.000										
SECTION (17ORBIT	ER FUSEL	AGE		DEPENDEN	NT VARIA	BLE CP/CF	> 5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.80.00	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 65.000		0007													•
68.000		.0003											0051		
69.000 79.300		~.0003			0069		-							÷	-
95.500 95.700		0114			0084		-:0084			•				•	
96.300	-0441				2157		•								•
103.000 105.000					0123										0369
112.600 117 500					0141						•	.0051		.0066	
120.800 127.900						07-5			.0634					,	•
129.500						.0357		.0588							
130.000 135.000		0135			0123				.0878	.0382		.0000			
139.600 144.000							-		.1026			.0081			
155.000	. 1509											.0001			
180.000	.1177	0012			0009										
X/LB	1.0250	1.0500											-		
PHI .000	~.0225	0236			-					÷					
MACH (3)	= 5.	.700 A1	LPHA (3)) = 5	.000 PI	INF =	.13154	Q(P5)	1) = 1.8	2605	RN/L :	1.2000	CPS	STG =	1.7839
SECTION (1)ORBIT	TER FUSEL	AGE		DEPENDEN	NT VARIA	BLE (P/C	PS			•	•			
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	. OF OO	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI									-						•
.000 000.01	.9917	.6000	.2516	.1513		.1047	.0250	.0585 .0548		.0342	•				
20.000 24.500				•	ē			.0570 .0585	*					•	•
39,000								.0681						2551	
163.000 174.000												.4099		.2551	
180.000	.9917				. 1648			.1140	.1169	.1385	.3198		.4787		.4718

X/L8

.000

1.0250 1.0500

-.0122 -.0162

UPWT 1059 (1H4) 01 ALONE ORBITER FUSELAGE (RQ3BCA) MACH (3) =3,700 ALPHA (3) = 5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .2000 .3000 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145 .4000 .5000 .6000 .7800 .8000 .8050 PHI .000 .0217 .0136 -.0092 -.0076 .0169 .0206 .0169 0239 -.0049 23.000 .0136 .0239 31.500 .0298 .0173 33.100 35.000 .0291 40.000 .0342 .0188 45.000 .0232 50.000 79د0. 51.600 -.0228 57.000 .0014 60.900 -.0013 65.000 -.0031 68.000 -.0233 69.000 -.0046 79.300 -.0129 95.500 -.0135 -.0222 95.700 -.0052 96.300 .0467 103.000 -.0174 105.000 -.0314 112.600 -.0201 117.500 -.0025 -.0010 120.800 .0623 127.900 .0263 129.500 .0610 130.000 -.0022 .0705 .0213 135.000 -.0248 -.0213 139,600 .059B 144.000 .0020 155.000 .1022 180.000 .0775 -.0110 -.0242

DATE 20 APE	२ 76		TABULATE	ED SOURC	E DATA -	144								PAGE	213
				UPW	T 1059 (1H41 O1	ALONE	ORBIT	ER FUSEL	AGE		(RQ3	BCA)		
MACH (3)	= 3.	700 AI	PHA (4	1 = 10	.000 P	INF =	.13154	OLES	[) = 1.	2805	RN/L	= 1.2000	CP	STG =	1.7839
				, 10			1								
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/CF	2 5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
C11.17															
PHI .000 10.000 20.000 24.500 39.000	.9890	.6923	.3275	.2134		.1582	. 1249	.1028 .0991 .1006 .0984 .0741		.0734					٠.
163.000												2766		. 1517	
174.000 180.000	.9890				.1141			.0704	.0799	.0917	. 1704	.2365	.3315		.3412
X/LB	.2000	.3000	.4000	.5000	.6000	. 7800	.3000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHĮ															
53.000 .000	.0557	.0439 .0446	.0459	.0487	.0461		.9563				.0202		.0145	.0134	
24.000 31.500	.0572 .0586	.0110													
33.100	.0366	.0468													
35.000	.0586											•			
40.000 45.000	.0572	.0491 .0520													
50.000	.0454	.0320													
51.600													0365		
57.000 60.900		0080 0099													
65.000		0105													
68.000													0368		
69.000		0114													
79.300 95.500					0241 0235		0269								
95.700		0136			. 0200		.,,,,,								
96.300	.0406								-			•		•	
103.000 105.000					0251										0430
112.600					0282				•			•			101,00
117.500				•								0189		0217	
120.800						0000			.0629						
127.900 129.500						0052		.0026							
130.000									.0394	0044		0213			
135.000		0359			0288				0094						
139.600 144.000									60034			0133			
155.000 180.000	.0560 .0426	0095			0092										

 (\cdot)

-.0302

-.0284

.0424

(RQ3BCA) UPWT 1059 (1H4) 01 ALCHE ORBITER FUSELAGE MACH (3) =3.700 ALPHA (4) = 10.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 .0099 .0029 CPSTG = 1.7839MACH (3) ≃ 3.700 ALPHA (5) = 20.000 PINE = .13154 Q(PS1) = 1.2605RN/L 1.2000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 .1650 .1700 X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 PHI .000 .2224 .2180 .9363 .8596 .5080 .3749 .3041 .2529 .1817 10.000 20.000 .2137 24.500 39.000 .1970 .0772 163.000 .0286 .0504 174.000 .1151 .0842 .0377 180.000 .9363 .0482 .0234 .0304 .0461 1.0000 1.0145 X/LB .8620 .9500 .9630 .9750 .2000 .3000 .4000 .5000 .6000 .7800 .6000 .8050 .8290 1HP .1571 .1695 .1089 .0994 .0903 .1389 .1469 .1531 .000 .1542 23,000 .1346 24,000 .1505 31,500 . [404 33.100 .1302 35.000 .1331 40.000 .1041 .1244 45.000 .1186 50.000 .0424 51.600 -.0390 57.000 -.0212 60.900 65.000 -.0107 -.0101 -.0393 68.000 69.000 -.0149 79.300 -.0360 95.500 -.037B -.0203 95.708 -.0173 96.300 .0281 103.000 -.0203 -.0423 112.600 117.500 120.800 ~.0257

PAGE 215 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (ROJBCA) ORBITER FUSELAGE UPWT 1059 (IH4) OI ALONE 3.700 ALPHA (5) = 20.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .9750 1.0000 1.0145 X/LB .6000 .7800 .8300 .8050 .8290 .8620 .9500 .9630 .2000 .3000 .4000 .5000 PHI 127.900 -.0201 .0296 129.500 -.0281 130.000 .0068 -.0217 135.000 -.0375 -.0354 139.600 -.0209 -.0293 144.000 155.000 .0086 180,000 -.0035 -.0128 -.0319 X/LB 1.0250 1.0500 PHI .000 .0954 .0854 CPSTG = 1.8033≈ 1.2000 MACH (4) =4.600 ALPHA (1) = -5.000 PINF .66240-01 Q(PSI) = .98142 RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE OP/CPS .1800 .1600 .1650 .1708 . 1750 .1250 .1500 X/LB .0200 .0400 .0600 .0300 .1000 .0050 .0500 PH1 .0055 .000 .9810 .4188 .1399 .0680 .0375 .0385 .0165 .0085 .0115 10.000 20.000 .0135 24.500 39.000 .0585 .4600 163,000 .7744 174.000 .8427 .8295 .2930 .2311 .2680 .6393 180.000 .9810 .9750 1.0000 1.0145 X/LB .8100 .8050 .8290 .8620 .9500 .9530 000S. .3000 .4000 .5000 .6000 .7800 PHI. -.0190 -.0173 -.0162 .0005 -.0015 -.0053 .0049 .0035 .0101 .000 23,000 -.0045 24.000 -.0005 31.500 .0055 33.100 -.0035 35.000 .0005 40.000 -.0015 -.0075 45.000 -.0105 .0225 50.000 -.0105 51.600 57.000 .0079 60.900 .0091

ORBITER FUSELAGE (PQ3BCA)

				UPA	11 6003 11	mai Oi	ALUM.	ONDITE		10L		*** 450	un.		
MACH (4)	= 4.	600 AI	LPHA (1)	= -5	.000										_
SECTION (DORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/CF	°5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	. 8290	.8620	. 9500	.9530	.9750	1.0000	1.0145
PHI 65.000 68.000 69.000		.0091											0002		
79.300 95.500 95.700 96.300	.0525	.0087	•		0005 0029		0117								
103.000 105.000 112.600 117.500 120.800	,000,0				0052				.0596			0029		0044	0251
127.900 129.500 130.000 135.000 139.600		0048			0109	.0769		.2196	.1530	.0439		0040			
14º.000 155.000 180.000	.2033 .1842	.0134			0001							0009			
X/LB	1.0250	1.0500						-							
PHI .000	0200	0207						•							
MACH (4)	= 4,	600 AI	_PHA (2)	=	.000 PI	NF =	.66640-0	1 QCPSI	99. = (3142	RN/L	= 1.2000	CP:	STG #	1.8033
SECTION (1108811	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/CF	95							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PH1 .000 10.000 20.000 24.500 39.000	.9925	.5079	. 1892	.1021		.0625	.0-46	.0261 .0197 .0225 .0252		.0114				-	
163.000 174.000 180.000	.9925				.2195			. 1596	. 1580	.1892	.4370	.5502	.653 [°] 1	.3382	.6582

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 217

DUIT CO U	70		INDOPATE	to acous	C DATA -	LITT									
				เรา	IT 1059 ([H4) O1	ALONE	CRBIT	ER FUSEL/	AGE		(RQ3	ECA)		
MACH (4)	= 4.	600 A	LPHA (2) =	.000						4.51		•		
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE C2/C	PS							
X\FB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000	.0040	.0003	.0004	.0154	0036		.0138				0070		0097	0080	
23.000 24.000	.0040	0006										•			
31.500	.0114	0017					•	•		;	•				
33.100 35.000	.0077	.0013	-					•			•				
40.000 45.000	.0096	0015 0024													
50.000 51.600	.0234												0007		
57.000		.0129											10001		
60.900 65.000		.0121 .0125							-						
68.000 69.000		.0121											.0012		
79.300					.0012		O'DOL:						-		
95.500 95.700		.0121			.0012		0004								
96.300 103.000	.0564				.0004										
105.000 112.600					.0000										~.0174
117.500					10000				.0277			.0068		.0083	
120.800 127.900						.0261			.4677						
129.500 130.000								.0214	. 0356	.0277		.0061			
135.000 139.600		0026			0004				,0288						
144.000									,0200			.0129			
155.000 180.000	.145 8 .1367	.0108			0063					_					
X/LB	1.0250	1.0500		•										•	
PHI							٠							٠.	
.000	0117	0134													

J	. , ,		INDOMNIC												
				UPW	T 1059	(1H4) OI	ALONE	ORBITE	R FUSELA	GE		(RQ3)	BCAI		
MACH (4)	= 4.5	JA 002	.PHA (3)	= 5	.000 1	PINF =	.6621-0-0	1 Q(PS)	98. = (1	1142	RN/L	= 1.200	D CF	STG =	1.8033
SECTION (DORBITE	ER FUSELA	\GE		DEPENDI	ENT VARIA	ABLE CP/CP	5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0500	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	. 1800
PHI .000 10.000 20.000 24.500 39.000 163.000	.9952	.5995	.2504	.1475		.1801	.0730	.0523 .0475 .0513 .0523 .0655		.0315				.2156	
174.000 180.000	.9952				. 1574			.1032	.1058	. 1264	.2506	.3337	.4549		.4770
X/LO	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 33.100 35.000 40.000	.0192 .0202 .0269 .0249	.0126 .0126 .0154	.0096	.0239	.0076		. 0234				0051		0093	0059	
45.000 50.000 51.600	.0324	.0183							. %				0149		
57.000 60.900 65.000 68.000 69.000		.0035 .0028 .0024											0122		
79.300 95.500 95.700 96.300 103.000	.0472	.0016			0106		0110								0244
105.000 112.600 117.500 120.800 127.900					0126	.0110			.0242			0030		0030	0244
129.500 130.000 135.000		0141			0133			.0089	.0194	.0115		0072			
139.600 144.000 155.000 180.000	.0898 1580.	.0075			0130				.0163			003%			

TABULATED SOURCE DATA - IH4

PAGE 219 ORBITER FUSELAGE (ROSECA) UPWT 1059 (1H4) 01 ALONE MACH (4) = 4.600 ALPHA (3) =SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 .000 -.0124 -.0151 CPSTG **- 1.803**3 .66240-01 Q(PS1) @ 1.2000 PINF .98142 RN/L MACH (4) =4,600 ALPHA (4) = 10.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 . 1650 .1700 .0000 .1000 .1250 .1500 .1600 X/LB .0050 .0200 .0400 .0500 .0600 .(800 PHI .0674 .0986 .000 .9877 .6926 .3248 .2100 .1546 ..222 .0939 10.000 .0967 20.000 .0948 24.500 39.000 .0703 .1149 163.000 .1697 174.000 .2626 .3067 .1225 .1091 .0627 .0680 .0836 180.000 .9877 1.0000 1.0145 .9630 .9750 .0000 .8050 .8290 .8620 .9500 X/LB .2000 .3000 .4000 .5000 .6000 .7800 PHI .0198 .0160 .0590 .0225 .000 .0485 .0363 .0333 .0591 .0584 .0363 23.000 24.000 .0485 31.500 .0523 33.100 .0410 35.000 .0523 40.000 .0514 .0438 45.000 50.000 51.600 57.000 .0476 .0391 -.0212 -.0026 60.900 65.000 -.0022 -.0018 -.0219 68.000 69.000 79.300 -.0018 -.0153 95.500 -.0161 -.[181 95.700 -.0018 96.300 103.000 .0440 -.0173 -.0285 105.000 112.600 117.500 -.0184

.0421

-.0111

-.0119

				UFW	T 1059 (1H4) 01	ALONE	ORBIT	ER FUSEL	AGE		(RQ3E	CA)		
MACH (4	.) = 4.6	300 AL	_PHA (4:	= 10	.000										
SECTION	(L)ORBITE	ER FUSEL/	4GE		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9530	.9750	1.0000	1.0145
PHI 127,900 129,500 130,000 135,000 139,600 144,000 155,000	. 050 1 . 0555	0196			0196	.0016		.0005	.0174	.0005		0157 0157			
X/LB	1.0250	1.0500													
PH1 .000	.0123			·							- 13				
MACH (4			PHA ('5)) = 20,	.000 P	INF =	.66240-	01 Q(PS	(1) = .9	8142	RN/L	= 1.2000) CP	STG =	1.8033
SECTION	(1)ORBITE	ER FUSELA	AGE		DEPENDE	NT VARIA	BLE CP/C	P5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0900	.1000	.1250	.1500	. 1600	. 1650	.1700	.1750	. 1800
PHI .000 10.000 20.000 24.500 39.000	.9184	.6509	.4991	.3642		.2968	.2:60	.2164 .2118 .2081 .1934 .0752		.1767					
163.000 174.000	• .											.0371		.0272	
180.000	.9184				.0552		•	.0242	.0263	.0546	.0356	,0371	.0561		.0721
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8300.	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000	. 1527 . 1472	.1352 .1315	.1427	1530	.1530		.1712		·		.1089		.0987	.0916	
31.500 33.100 35.000 40.000	.1361 .1306 .1029	.1269	•							,					
45.000 50.000 51.600 57.000 60.900	.0392	0026 0033											 0165.		

DATE 20 AF	R 76		TABULATE	D SOURCE	E DATA -	IH4					-			PAGE	221
				UPW.	T 1059 -01	IH41 OI	ALONE:	ORBIT	ER FUSEL	AGE		(RQ3	BCAI		
MACH (4)	= 4.	600 AL	PHA (5)	= 20	.000					•		•			
SECTION (1)ORBIT	ER FUSELA	AGE:		DEPENDEN	NT VARIA	ABLE UP/C	25							
X/LB	.2000	.3000	4000	.5000	.6000	.7800	.8000	.8050	.0290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 65.000 68.000 69.000 79.300		0033			0033								0166		·
95.500 95.700 96.300 103.000 105.000	.0418	0030			0067		0158								0211
112.600 117.500 120.800 127.900 129.500					0105	0053		.0194	.0421		5 ,,	0048		0058	
130.000 135.000 139.600 144.000 155.000	.0158	0033			0162				.0099 0101	0058		0124			
180.000 X/L8	.0097 1.0250	.0018			0185										
PHI .000	. 0923	.0825												•	

-.0868

PAGE 222

(15 APR 76) (RQ3UCA) UPWT 1059 (IH4) 01 ALONE ORB. UPPER WING PARAMETRIC DATA REFERENCE DATA .000 1.200 BETA .0000 INCHES RN/L SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = .0000 INCHES ZMRP BREF = 1290.3000 INCHES .0000 INCHES SCALE = .0100 CPSTG = 1.7063 MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SANBM .4000 .6000 .8000 X/CW .050 .1084 -.0121 -.0112 .0525 .200 .600 -.0727 -.0694 .800 -.0700 .900 .1398 -.0524 .950 -.0597 CPSTG = 1.7063RN/L = 1.2100MACH (1) = 2.360 ALPHA (2) = 5,000 PINF = .48157 Q(PSI) = 1.8775SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS 54/8M .4000 .6000 .8000 X/CM .050 .0561 .200 -.0647 -.0583 -.0013 .600 -.0929 -.0918 **;800** ~.0924 .900 .1327 ~.0797 -.0769 .950 CPSTG = 1.7063 RN/L = 1.2100 MACH (1) = 2.360= .48157 Q(PSI) = 1.8775ALPHA (3) # 10.000 PINF DEPENDENT VARIABLE CO/CPS SECTION (1) ORB. UPPER WING SA/BM .4000 .6000 .8000 X/CW .050 -.0318 .200 -.0836 -.0892 -.0426 .600 -.1070 -.1039 .800 ~.1044 .900 1296 -.0894

```
UPWT 1059 (IH4) 01 ALONE
                                                                   ORB. UPPER WING
                                                                                                   (RQ3UCA)
MACH (1) =
                2,360
                        ALPHA ( 4) = 20.000 PINF
                                                      = .48157
                                                                    Q(PSI) = 1.8775
                                                                                        RN/L
                                                                                               = 1.2100
                                                                                                             CPSTG = 1.7063
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
2Y/BW
            .4000
                    .6000
                           .8000
  X/CM
          -.0859
-.1092 -.1226 -.0918
    .050
    .200
           -.1228 -.1222
    .600
    .800
                   -.1222
    .900
                          -.0916
                   . 1448
    .950
                   -.0927
MACH ( 2) =
                2.950
                        ALPHA ( 1) =
                                                                    Q(PSI) = 1.6163
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
2Y/BW
            .4000
                    .6008
                           .8000
  X/CH
    .050
           .1088
    .200
           -.0150
                    .0063
                            .0694
    .600
           -.0527 -.0498
    .800
                   ~.0504
    .900
                   .0560 -.0356
    .950
                   -.0367
MACH ( 2) =
               2.950
                                                                                                             CPSTG = 1.7529
                        ALPHA ( 2) = 5.000
                                               PINF
                                                                    Q(PSI) = 1.6163
                                                                                        RN/L
                                                                                              = 1.2100
                                                      * .26532
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SA\BM
            .4000
                   .6000 .8000
  X/CW.
    .050
            .0570
           -.0367
    .200
                  -.0185 .0317
    .600
           -.0589
                  -.0564
    800
                   -.B555
    .900
                    .0646 -.0382
    .950
                   -.0428
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TABULATED SOURCE DATA - 1H4

DATE 20 APR 76

PAGE 225

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UPWT 1059 (IH4) OI ALONE
                                                                 ORB. UPPER WING
                                                                                                (RQ3UCA)
MACH (2) = 2.950
                       ALPHA (3) = 10.000 PINF = .26532
                                                                 Q(PSI) = 1.6163
                                                                                     RN/L
                                                                                            = 1.2100
                                                                                                         CPSTG = 1.7529
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CF/CPS
2Y/BW
           .4000
                         .8000
                  .6000
 X/CH
    .050
         -.0148
    .200
         -.0578 -.0485 -.0017
    .600
          -.0567 -.0647
    .800
                  -.0634
    .900
                  .0610 -.0508
    .950
                  -.0489
MACH ( 2) =
               2.950
                       ALPHA ( 4) =
                                     20.000 PINF
                                                    = .26532
                                                                  Q(PSI) = 1.6163
                                                                                     RN/L
                                                                                          = 1.2100
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CF/CPS
2Y/BW
           4000
                  .6000
                         .8000
 X/CW
    .050
          -.0534
    .200
          -.0708 -.0590 -.0362
    .600
          -.0744 -.0723
    .800
                  ~.0696
    .900
                  .0647 -.0524
    .950
                  -.0541
MACH (3) = 3.700 ALPHA (1) = -5.000 PINF
                                                                                                         CPSTG = 1.7839
                                                                                          = 1.2000
                                                    = .13154
                                                                  Q(PS1) = 1.2605
                                                                                      RN/L
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
MB/A2
           .4000
                   .6000
                          .8000
 X/CW
    .050
           .1307
    .200
          .0191
                  .0470
                          .1270
    .600
          -.0291
                 -.0262
    .800
                  -.0249
    .900
                  .0344
                          .0034
    .950
                  -.0108
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OF POOR QUALITY
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PAGE 225
DATE 20 APR 76
                           TABULATED SOURCE DATA - IH4
                                                                                                        (RQ3UCA)
                                        UPHT 1059 (IH4) OI ALONE
                                                                      ORB. UPPER WING
                                                                       Q(PS1) = 1.2605
                                                                                                       1.2000
MACH (3) =
                3.700
                          ALPHA ( 2) =
                                           .000 PINF
                                                         = .1315+
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP'CPS
SA\BM
             .4000
                     .6000
                             .8000
  X/CW
            .0972
    .050
     .200
           -.0028
                     .0206
                             .0813
     .600
           -.0346
                   -.0322
     .800
                    -.0280
                     .0353
     .900
                           -.0067
     .950
                    -.0138
                                                                                                                  CPSTG
MACH ( 3) =
                3:700
                                                                                 1.2605
                                                                                             RN/L
                                                                                                       1.2000
                          ALPHA ( 3) =
                                                                       Q(PSI) *
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
2Y/8W -
             .4000
                     .6000
                             .8000
  X/CW
     .050
             .0551
            -.0252
                   -.0070
                             .0469
     .600
            -.0397
                   -.0366
     .800
                    -.0334
     .900
                     .0361
                            -.0139
     .950
                    -.0181
MACH (3) =
                                                                                                      1.2000
                                                                                                                  CPSTG = 1.7839
                 3.700
                         ·ALPHA ( 4) =
                                                                       Q(PSI) = 1.2605
  SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
 SA/BM
             .4000
                     .6000
                             .8000
   X/CW
     .050
             .0021
     .200
            -.0281
                    -.0147
                             .0333
     .600
            -.0350
                   -.0304
     .800
                    -.027B
     .900
                     .0457
                            -.0077
     .950
                    -.0118
```

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DATE 20 APR	₹ 76		TABULATED S	OURCE DATA	– 184			-			PAGE	556
				UPWT 1059	(IH4)	O1 ALONE	ORB. UPPE	R WING		(RQ3L	ICA)	
MACH (3)	= 3.	700 A	LPHA (5) =	20.000	PINF	= .13154	Q(PSI) =	1.2605	RN/L	= 1.2000	CPSTG =	1.7839
SECTION (110RB.	UPPER WI	NC ,	DEPEN	DENT VA	ARIABLE CP/CP	5					
SA\BM	.4000	.6000	.8000									
.200	0283 0402 0413	0400 0368	0023	. • .		e e			÷	. *		
MACH (4)	= 4.	600 A	LPHA (1) =	-5.000	PINF	= .66240-0	1 Q(PSI) =	.98142	RN/L	= 1.2000	CPSTG =	1.8033
SECTION (1)ORB.	UPPER WI	NG	DEPEN	DENT VA	ARIABLE CP/CP	S					
SANBM	.4000	.6000	.8000			•		P				
X/CW .050 .200 .600 .800 .900	.1119 .0171 0236	.0521 0159 0162 .0285	.1456									
MACH (4)	= 4;	.600 A	LPHA (2) =	.000	PINF	66240- 0	1 Q(PSI) :	.98142	RN/L	= 1.2000	CPSTG =	1.6033
SECTION (DORB.	UPPER WI	NG	DEPEN	IDENT VA	ARIABLE CP/CF	S					
2Y/BW	.4000	.6000	.8000									•
X/CW .050 .200 .600	.0873 .0004 0244	2450. 0810	.0905				<u>-</u>				•	
.800 .900 .950		0150 .0319 .0058	.0185		·	· ·						

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PAGE 227
DATE 20 APR 76
                         TABULATED SOURCE DATA - IH4
                                     UPWT 1059 (1H4) 01 ALONE:
                                                                 ORB. UPPER WING
                                                                                                  (RQ3UCA)
MACH (4) =
             9.600
                       ALPHA ( 3) =
                                      5,000 PINF = .66840-01 Q(PSI) = .98142
                                                                                       RN/L
                                                                                             = 1.2000
                                                                                                           CPSTG = 1.8033
SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE (P/CPS
SA/BM
           .4000
                  .6000
                          .8000
 X/CW
   .050
          .0548
    .200
          -.0126
                  .0071
                          .0570
          -.0267
    .600
                 -.0207
    .800
                  -.0163
    .900
                   .0319
                          .0212
    ,950
                   .0044
                                                                                                           CPSTG = 1.8033
MACH (4) =
               4.600
                       ALPHA (4) =
                                     10.000 PINF = .66640-01 Q(PSI) = .98142
                                                                                       RN/L = 1.2000
SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE (P/CPS
SA/BM
           .4000
                  .6000
                           .8000
 X/CW
    .050
          .0166
    .200
          -.0139
                  .0023
                           .0414
    .600
          -.0153 -.0153
    .800
                  -.0116
    .900
                           .0192
                   .0397
    .950
                   .0096
MACH (4) = 4.600
                      ALPHA (5) ≈
                                              PINF
                                                    = (129)D 10-04588. =
                                                                                       RN/L = 1.2000
                                                                                                           CPSTG = 1.8033
                                      20,000
SECTION ( 1)ORB. UPPER WING
                                         DEPENDENT VARIABLE (P/CPS
SA\8M
           .4000
                   .6000
                           .8000
 X/CW
          -.0040
-.0205 -.0121
    .050
    .200
                           .0153
          -.0270 -.0195
    .600
    .600
                  -.0154
    .900
                   .0370
                           .0160
    .950
                   .0062
```

(-3)

SCALE =

.800

CPSTG = 1.7063

.000

CP5TG = 1.7063MACH (1) = 2.360- .48157 Q(PSI) = 1.8775RN/L = 1.2100 ALPHA (1) = .000 PINF DEPENDENT VARIABLE CO/CPS SECTION (1) ORB. LOWER WING .9500 .9980 MB/AZ .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 X/CW .3528 .3203 **~.0453** .000 .001 .0054 .0075 .2122 .0462 .3198 .0441 .0075 .002

.4316 .3928 .003 .0897 .004 .1033 .0209 .0439 .005 .0408 .0431 .025 .0271 .045 .0431 .100 .0107 .0400 .0468 .153 .0033 .177 .0218 .0226 .200 .299 .0239 .0222 .302 .0243 .0222 .428 .0235 ,444 487 559 .0216 8050. .600 .0220 .700 -.0118 .736 .0204

-.0335 .850 .900 -.0515 -.0548 -.0557 -.0536 Q(PS1) = 1.8775ALPHA (2) = 5.000 PINF = .48157 MACH (1) = 2.360

-.0319

DEPENDENT VARIABLE CP/CPS SECTION (1) ORB. LOWER WING

SA/BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CW .000 .4051 .3710 -.0890 . 1400 .001 1850. .0240 .3187 .1237 .0951 .002 .003 .4121 .3311

.1884 .004 .2091 .1228 .005 .1153

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE &

		LOWER WING					BLE CIVE	PS .							
54\8M	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980		•			
X/CW .025				.1189	. 1333		. 1251								
.045				.1220	11.000										
.100 .153	.0384		_			.0918		.1328	.1318		* "	:			
.177					.0775										
.200 995.	.0341			.0547			•					-			
.302	1920.			.0618			.1174								
.428				.0010		.0926	• • • •						•		
444	.0410														
.487 .559				.0741	.0875										
.600						.0743									
.700				•		.0409									
.736 .800	.0529					.0137						•			
.850	- 1					0044									
.900				0188											
				0188		0184	0110		0133						
	= 2.	360 ALf	PHA (3)		.000 P		0110 .48157	Q(PS	0133 1) = 1.	9775	RN/L =	1:2100	CPSTG	= :	i.'
CH (1)		360 ALF) = 10.		INF =				8775	RN/L =	1.2100	CPSTG	= !	1.
CH (1)) = 10.		INF =	.48157			9775	RN/L =	: 1:5100	CPSTG	=	1 .'
CH (1) ECTION (110RB.	LOWER WING	G) = 10.	DEPENDE	INF = NT VARIA	.48157 BLE CF/CF	? 5	1) = 1.		RN/L =	. 1.2100	CPSTG	≒ .	t .
CH (1) ECTION (/BW X/CW .000	110RB.	LOWER WING	.3480) = 10.	DEPENDE	INF = NT VARIA .6000	.48157 BLE CF/CF	.8500	1) = 1.	.9980	RN/L =	: 1:5100	CPSTG	= .	t.
CH (1) ECTION (/BW X/CW .000	110RB.	LOWER WING	G) = 10.	DEPENDE	INF = NT VARIA .6000 .4620	.48157 BLE CF/CF	.8500 .3676 .2569	1) = 1.		RN/L =	: 1:5100	CPSTG	= :	1.
CH (1) ECTION (/BW X/CW .000 .001	110RB.	LOWER WING	.3480) = 10.	DEPENDE	INF = NT VARIA .6000 .4620 .2546 .1831	.48157 BLE CF/CF	.8500 .3676 .2569	1) = 1.	.9980	RN/L =	1.2100	CPSTG	* :	i.
CH (1) ECTION (/BW X/CW .000 .001 .002 .003	110RB.	LOWER WING	.3480) = 10.	DEPENDE	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175	.48157 BLE CF/CF	.8500 .3676 .2569 .2369 .2429 .3124	1) = 1.	.9980	RN/L =	1.2100	CPSTG	= :	1.
CH (1) ECTION (7BW X/CW .000 .001 .002 .003	110RB.	LOWER WING	.3480	.4000	DEPENDE .5000	NT VARIA .6000 .4620 .2546 .1831	.48157 BLE CF/CF .75(0	.8500 .3676 .2569 .2369 .2429	1) = 1.	.9980	RN/L =	1.2100	CPSTG		t.
CH (1) ECTION (/BW X/CW .000 .001 .002 .003 .004 .005	110RB.	LOWER WING	.3480) = 10. .4000	DEPENDE	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175	.48157 BLE CF/CF	.8500 .3676 .2569 .2369 .2429 .3124	1) = 1.	.9980	RN/L =	1.2100	CPSTG	- !	t.
CH (1) ECTION (/BW X/CW .000 .001 .002 .003 .004 .005 .025	110RB.	LOWER WING	.3480	.4000	DEPENDE .5000	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175	.48157 BLE CF/CF .75(0	.8500 .3676 .2569 .2369 .2429 .3124	1) = 1.	.9980 1044	RN/L =	1.2100	CPSTG	- !	t.
CH (1) ECTION (/BW X/CW .000 .001 .003 .004 .005 .045	110RB.	LOWER WING	.3480) = 10. .4000	.3702	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CF/CF .75(0 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG	-	1.
CH (1) ECTION (/BW X/CW .000 .001 .002 .003 .004 .005 .025 .100 .153	110RB.	LOWER WING	.3480	.4000 .1448 .1531	DEPENDE .5000	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CF/CF .75(0 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG	-	1.
CH (1) ECTION (78W X/CW	110RB.	LOWER WING	.3480) = 10. .4000	.3702	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CF/CF .75(0 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG	-	t.
CH (1) ECTION (110RB. 1.2500	LOWER WING	.3480	.4000 .1448 .1531	.3702	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CF/CF .75(0 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG	-	t.
CH (1) ECTION (1) FECTION (1)	.0721	LOWER WING	.3480	.4000 .4000 .1448 .1531	.3702	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CP/CF .7500 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG		1.
X/CW .000 .001 .002 .003 .004 .005 .025 .100 .153 .177 .209 .302 .428 .487	110RB. 1.2500	LOWER WING	.3480	.4000 .4000 .1448 .1531	.3702 .2212	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171 .1906	.48157 BLE CP/CF .7500 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG		1.
X/CW .000 .001 .002 .003 .004 .025 .045 .100 .299 .302 .428	.0721	LOWER WING	.3480	.4000 .4000 .1448 .1531	.3702	NT VARIA .6000 .4620 .2546 .1831 .3522 .3175 .2171	.48157 BLE CP/CF .7500 .4364	.8500 .3676 .2569 .2369 .2429 .3124 .2429	I) = 1. .9500	.9980 1044	RN/L =	1.2100	CPSTG		1.

797

.800 .850 .900

(RQ3LCA) UPWT 1059 (IH4) 01 ALONE ORB. LOWER WING MACH (1) = 2.360ALPHA (3) = 10.000SECTION (1)ORB. LOWER WING DEPENDENT VARIABLE CF/CPS SA\BM .2500 .3011 . 3480 .4000 .5000 .6000 .7500 .8500 .9500 X/CW .700 .1001 .736 .0991 .800 .0657 .850 .900 .0428 .0219 .0247 .0372 .0272 MACH (1) = 2.360 ALPHA (4) = 20.000 Q(PSI) = 1.8775CPSTG = 1.7063PINF = .48157 RN/L = 1.2100 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .3480 .8500 .3011 .4000 .5000 .6900 .9500 X/CM .2990 .000 .4865 -.1079 .001 .0411 -.0034 .3693 .4261 .4801 .4742 .002 .3626 .4347 .2351 .003 .1033 .004 .5086 .3923 .005 .4455 .025 .1963 .3369 .4585 .045 .2300 .100 .3551 .4552 .2970 .1528 .153 .2911 .177 .200 .2211 . 1,685 . 299 .302 .2286 .3807 .428 .3125 .444 .1836 .487 .559 .3077 .2656 .3021 .600 .700 .736 .2188

. 1495

.1220

.1439

.1213

.1208

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 ORB. LOWER WING (RQ3LCA) UPWT 1059 (1H4) 01 ALONE 1.2100 ALPHA (1) = Q(PSI) = 1.61632.950 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .3011 .3400 .4000 .5000 .6000 .750:1 .9500 .9980 X/CW .000 -.0153 .3364 .3815 -001 .0027 .0062 .2232 .0654 .3352 .0645 .002 .0259

.0454 .4297 .1118 .003 .4556 .004 .1265 .0410 .0475 .025 .0410 .0613 .045 .0340 .0244 .0538 .0636 .153 .177 .200 .299 .0010 -.0021 -.0088 -.0038 -.0025 .0350 .428 .444 .0113 -.0004 .487 .559 .600 .0115 .0092 .0033 .700 .736 -.0104 .0042 .800 .850 .900 -.0249 -.0326 -.0369 -.0392 -.037~ -.0259

MACH (2) = 2.950 ALPHA (2) = 5.080 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1)ORB. LOWER WING DEPENDENT VARIABLE CP/CPS

.0269

			••			••		_		
SA\BM	.2500	.3011	.3480	.4000	.5000	6000	.7500	.8500	.9500	.9980
X/CW .000 .001 .002 .003 .004 .005		.0377	.0345		. 3568	.4103 .1730 .1163 .4266 .2173	. 400.	.3983 .1945 .1211 .3698 .2303 .1251		0402
.025 .045				. 1214 . 1227	.1588	2015	.1633	4 24 84 24		
.100 .153 .177	.0461				.0632	.0915		.1536	. 1511	

PAGE 231

CPSTG = 1.7529

				UPW:	r 1059 (IH4) O 1	ALONE	ORB. L	OWER WI	NG			(RQ3LCA)			
MACH (2)	= 2,	.950 A	rbhy (5)	= 5.	.000											
SECTION (1)ORB.	LOWER WI	NG		DEPENDE	NT VARIA	BLE CP/CF	PS .								
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
x/cW .302 .428 .444 .487 .559 .600 .700	.0306			.0469	.0721	.0790 .0543 .0397	.1069							٠		
.736 .800 .850 .900	.0382			0090		.0184 .0043 0065	.0009		.0048							
MACH (2)	= 2.	.950 A	LPHA (3)	= 10	.000 P	INF =	.26532	Q(PSI) = 1.	6163	RN/L	=	1.2100	CPSTG	=	1.7529
SECTION (1)ORB.	LOWER WI	NG		DEPENDE	NT VARIA	BLE CP/CF	°S								
SANBM	.2500	.3011	. 3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .000 .001 .003 .003 .004 .005		1620.	.0080	. 1354	.3884	.4806 .2400 .1795 .3914 .3172 .2094	.4608 .2447	.4059 .2445 .2189 .2992 .3044 .2258		0543						
.045				.1448		.1692		.2311	.2053							
. 153 . 177 . 200 . 299	.0673			.0907	.1297						-					
.302 .428				.8963		. 1494	. 1893									
.444 .487 .559 .600 .700 .736 .800	.0558	•		1081	.1372	.1270 .0901							,			
.850 .900				.0203		.0414 .0255	.0407		.0437							

															:		
	DATE 20 API	76	TA	ABULATED	SOURCE	DATA -	IH4								F	PAGE	233
					UPWT	1059 (1	H4) 01	ALONE	ORB. L	OWER WI	NG		(F	RQ3LCA)			
	MACH (2)	= 2.	950 ALPH	(4) AF	<u> </u>	000 PI	NF =	.26532	QCPSI	() = I.	6163	RN/L	= 1.i	2100	CPSTG	22	1.7529
	SECTION (DORB.	LOWER WING			DEPENDEN	IT VARIA	BLE CP/C	PS								
	SA\BM	.2500	.3011 .	3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
	.000 .001 .003 .003 .004		.0619 .	0272		.4317	.5686 .4332 .3505 .3265	. 5+69	.3909 .4845 .4379 .1868 .5449		0532	•1.			•		
	.005 .025 .045 .100	1=0		· •	.2362 .2092	.3565	.3972	.4799	.4535	. 3298							
	.153 .177 .200 .299 .302	.1564		÷,	.2116	.2771		.3790									
	.428 .444 .487 .559	.1751			.2472	.2941	.3145			: 							
	.600 .700 .736 .800	.2017				•	.2845			•							
	.850 .900				.1220		. 1842 . 1543 . 1285	. 1545		.1396	<i>:</i> .	•	٠.				-
	MACH (3)	= 3.	700 ALPH	A (1)	= -5.	000 P1	NF =	. 13 .54	Q(PS	1) = 1.	2605	RN/L	= 1.8	2000	CPSTG	•	1,7839
·	SECTION (110RB.	LOWER WING			DEPENDEN	IT VARIA	BLE CP/C	PS .								.*-
	SAVBM	.2500	.3011	3480	4000	5000	.6000	.7500	.8500	.9500	.9980						
	X/CW .000 .001 .002 .003		0229	.0275		.1633	.2765 .0293 .0028 .4647	.2367	.3858 .0388 .0162 .5042 .0762		.0021						
	.005 .025 .045	4.			0229 0244	.0013	.0134	.0301	.0222	.0338			, 				
	. 153 . 177 . 200	0176 0233		-	0277	0256	-,0001		.ucae	.0358		. *					-
	. –																

.900

(HOBLCA) UPWT 1059 (IH4) OL ALONE ORB. LOWER WING MACH (3) = 3.700 ALPHA (1) = -5.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE (P/CP5 SA/BH .2500 .3011 .3480 .4000 .5000 .6000 .7500 .9500 .9980 X/CM .302 -.0255 .0020 .428 -.0198 . .444 -.0244 1.487 -.0220 .559 .0053 .600 -.0233 .700 -.0303 .736 .0061 .800 -.0319 .850 -.0295 .900 -.0314 -.0295 -.0319 -.0253 1.2000 CPSTG = 1.7839MACH (3) =3.700 PINF = .13154Q(PSI) = 1.2605ALPHA (2) = SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\BM .9980 .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 X/CW .000 .3325 .4065 .0002 .001 -.0005 .0002 .2321 .0723 .3519 .0814 .002 .0537 .0351 .003 .4482 .4588 .004 .1332 .1362 .005 .0485 .0600 .025 .0240 .050B .0730 .045 .0247 .100 .0278 .0626 .0730 . 153 -.0020 .177 -.0026 .200 -.0113 -.0068 .0239 .302 -.0141 .428 -.0042 .444 -.0068 .487 .559 -.0050 -.0047 .600 -.0042 .700 -.0123 -.0039 .736 .800 -.0204

-.0241

-.0274 -.0249

-.0159

-.0274

DATE 20 AP	R 76	TAE	BULATED SOUR	RCE DATA	- IH4									PAGE	535	,
			UF	PWT 1059	(1H4) O1	ALONE	ORB. L	OWER WI	NG			(RQ3LC	A) (A			
MACH (3)	= 3.7	00 ALPHA	\ (3) =	5.000	PINF =	. 13154	Q(PSI	. = 1.	2605	RN/L	=	0005.1	CPSTG	=	1.7839	ł
SECTION (1)ORB, L	OWER WING		DEPEND	ENT VARIA	BLE CP/C	P 5		J.			•				
500 (501)	2500	70						8550	eenn							
SANBM	.2500	.3011 .3	3486 .4000	.5000	6000	.7530	.8500	.9560	.9980				•			
X/CM																
.000		.0195 .0	0180	2165	.4156	111.70	.4292		0151	•		·				
.002		.u.ee.u.	1180	.3167	1409	.4178	.1478 .1137		•					•		
.003					4444		.4140								•	
.004				•	.2119		.2064									
.005					.1115		.1215									
.025 .045			.083:	.1277	,	.1439										
.100	•		.0046	=	.0811		.1232	. 1232								
. 153	.0239		•		.00		*****		1							
177				.0520) .											
.200			.0323	3 .	•				•	* * *						
.299 .302	.0190		.0346	•		. 09 24				**.			•	• '		
.428			.0340	.	.0658	.09 14							•			
.444	.0206	•				-				•						
.487				.0549	•							•				
.559			.0419	9								•				
.600 .700					.0515 .0264											
.736	.0167				·ucu						4		•		• •	
.000					.0056				.:							
.850					0054											
.900			015	1	0111	00 <i>6</i> 0		.0035								
MACH (3)	= 3.7	OO ALPHA	<u> </u>	10.000	PINF =	.13154	Q(PS)	l) = 1.	2605	RN/L	=	1.2000	CPSTG	38	1.7839	3
SECTION (11000 (OWER WING		DEBENE	ENT VARIA	DIE 03/0	ne .									
acorrow (TOND. L	ONEK MINO		DEFERM	TEIAI AWESTS		· .									
SA/BM	.2500	.3011 .3	480 .400	.5000	6000	. 75)0	.8500	.9500	.9980							
						21 - 63 10			•							
X/CM .000					.4980		.4449		0217					•	•	
.001		.0292 .0	0152	. 3938		.4889	.2333		0217		٠.	` .			ř	
.002		10000	J. J.		.1662	1000	.1963		•							
.003					.4335		. 3555								٠.	
.004		_			.3089		.2988						**			
.005		•	101	5 20es	.1942	570	.2046	1.								
.025 .045	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		.121	2 .2067 8		. 2340		1.0	54.4							
100			• 1440		.1511		.2096	. 1750								
. 153	.0586		•													
. 177	11			1083	3		1.			1. E.						
.200 .299	.0503	·	074	=							٠,					
	. 0000									:						

				UPW	T 1059 (1	H4) 01 /	ALONE	ORB. L	OWER WI	ING .			(RQ3LC	A) ;		
MACH (3)	= 3.	700	ALPHA (4)	= 10	.000											
SECTION (DORB.	LOWER W	ING		DEPENDEN	T VARIA	BLE CP/C	PS								
54\8M	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .302				.0779			161 1	• •								
.428 .444	.0526		•	•		.1307		•	:							
.487 .559		•		.0883	.1146											
.600 .700 .736	,0612	*				.1102										
.800 .850	,					.0512 .0342										
,900		200		.0124		.0213			.0412				2222	00070		1 2020
MACH (3) SECTION (= CU	DEPENDEN	NF =	.13154 BLE CE/C) = 1.	. 2605	RN/L	# !	.2000	CPSTG	=	1.7839
SA\BM	11.		.3480	.4000	.5000	.6000	.75(0	. 8500	.9500	.9980	٠					
X/CM							• *							•		
.000 .001 .002		.0656	.0402		.4995	.6477 .4394 .3363	.6267	.3578 .4145 .3775		0200						
.003 .004						.4116 .5323		.2115 .4656				٠				
.005 .025 .045		· .		.2042	.3552	.3920	.4869	.3911		•						
.100 .153	, 1447			.2275		.3437		.3968	.2812							•
. 177 . 200				. 1980	. 2603			·								•
.302 .309	. 1526		•	.2071			.3477		· · · · · · · · ·							
. 428 . 444 . 487	.1627	A. J.			.2740	.3082	•									
.559 .600		.:		.2242	12770	.2740						٠.				
.700 .736	. 1845					.2169										•
.800 .850 .900	· ·			.1043		.1718 .1413 .1170	.1275		.1297							
,				. 10 13		*1110	+15+0		.153/							

DATE 20 AP	R 76		TABULATE	D SOURC	E DATA -	1H4							7	r	AUL ES!
				UPW	IT 1059 (1H4) O I	ALONE	ORB. 1	LOWER WIL	NG .		· :	(RQ3LCA		
MACH (4)	= 4.	600 AI	LPHA (1)) = -5	.000 P	INF =	.66240-	o QCPS	1) = .98	3142	RN/L	-	1.2000	CPSTG	= 1.8033
SECTION (1)ORB.	LOWER WII	NG		DEPENDE	NT VARIA	BLE CF/C	-s				•			
5시시되었	.2500	.3011	.3480	.4000	5000	.6000	.7500	.8500	.9500	.9980				• •	•
X/CH			. :												
.000	•				*	.2739		.4553		.0145					
.001		0075	0105		. 1864	.0425	.3528	.0587							
500.						.0195	* .	.0300							
.003 .004	:					1064		.5965 .1105				•			
.005	•					.0275		0381						,	
. 025					.0195		.0515								
.045 .100	5.0	• '.	100	0095		.0151		.0435	.0515				•		
.153	0045		•	• 1		.0131		.0100	.00.5					• "	
.177					0039										
.200			. •	0032						,				:	*
.299 .299	0028			0035		* * * * * * * * * * * * * * * * * * * *	.010i								
.428				0033	. :	-:0067	*0101								
ւկկկ	0021				-										
.487		*.			0140		-								
.559	1	:		.0010		0110									
.600 700					•	0119 0173									-
.736	1500.					10175									
.800					•	0193									
.850 .900				0193		0200	0183		0121						
. 300				0193		-,0000	0103	•	0151	,					•
MACH (4)	= 4.	600 A	LPHA (2)) ¹ ="/	.000 P	INF =	-66249-	DI O(PS	1) = .91	3142 .	RN/L	. =	1,2000	CPSTG	* 1.8033
SECTION (1)ORB.	LOWER WI	NG.		DEPENDE	NT VARIA	BLE CP/C	PS				•			
SA/BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
14 401 1						* *.	•						- 1		
X/CW .000						. 3535		.4634		.0105					•
.001	•	.0022	.0013		.2325	.0777	.4023	1007							
.002			,			.0381		.0625							
.003						.4723		.5198							
.004 .005						.1526 .0510		. 1551 . 0595							•
.025	14			.0197	.0547	.0310	.0893	.0055							
.045				0169			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			•			1.1	100	
.100		:				.0356		.0731	.0741						
.153	.0022				.0024	•									•
.177 .200				.0034		• • • •	•				÷			•	
.299	-0034													100	
						•					•				

DATE 20	0 APR 76		TABULAT	ED SOURC	E DATA -	TH4									PAGE	239
				UPW	T 1059 (IH4) 01	ALONE	ORB.	LOWER WI	ING			(RQ3LC	A)		
MACH	(4)= 4	.600 A	LPHA (2) ==	.000								. :			
SECTIO	ON (1)ORB.	LOWER WI	NG		DEPENDE	NT VARIA	BLE CP'CP	S								
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .31 .42	02 28			.0027		.0110	.0343			•						
.4: .4: .5:	37 59 00			0062	0066	.0034							*	•		
.70 .73 .80	360059 00 50	•			. :	0019 0076 0110				•	2					
.90 MACH		.600 A	· LPHA (3	0131) = 5	.000 P	0124 = INF	0090 .66240-0	1 Q(PS	0004 9. = (1	98142	RN/L	-	1.2000	CF	PSTG =	1.803
SECTIO	ON (1)ORB.	LOWER WI	NG		DEPENDE	NT VARIA	BLE CP.CP	S			•				,	
SANBM	.2500	.3011	.3480	4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .01 .01 .01	05 01 00	.0183	.0164		.3289	.4453 .1467 .0938	.4720	.4710 .1486 .1176 .4453		.0051	•					
.00	04 05 25			.0768	.1306	.4799 .2257 .1146	. 1599	.1260								
.11 .19	00 53 .0230 77			.0778	.0082	.0814	:	.1193	.1127	. 			•			
.s. .s. .y.	99 .0106 02			.0092		.0579	.0825									
.41 .41	44 .0096 87 59	;		.0276	.0419			:					-			
.6 .7 .7 .8	00 36 .0109	: !				.0436 .0203									÷ €+	
.8	50			0130		0044	0027		.0066			-				

	DATE 20 API	R 76	TABULATE	D SOURCE	DATA -	IH4								F	PAGE	239
				UРЫТ	1059 (IH4) O1	ALONE	ORB. L	OWER WI	NG			(RQ3LCA)			
	MACH (4)	= ų,t	500 ALPHA (1:)	= 10.	000 P	INF =	.66240-0	t Q(PS1) = .g	B142	RN/L	Œ	1.2000	CPSTG	#	1.8033
	SECTION (IIORB. 1	_OWER WING	. 1	DEPENDEN	NT VARIA	BLE CP/CP	s								
	SANBM	.2500	.3011 .3480	.4000	5000	.6000	.750C	.8500	.9500	.9980						
	X/CW									•			•			
	.000		.0306 .0211			.5537	. 552:	.3911		. 0022						
	.002		.0306 .0211		.4293	.2403 .1704	. 556.	.2189 .1787								
	.003	:				.4941		.3011					•			
	.004 .005					.2006		.2762 .1893								
	.025		1	.1175	.2148		.2526									•
	.045 .100			.1251		. 1529		.1893	. 1629			•				
	. 153	.0551		: · · ·					11000							
	.177 .200			.0693	1043							-				
	.299	.0336		. 0005												
	.302			.0713			. 1525							·		
	.428 .444	.0465				. 1223										
·	.487		en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co		.1043											
	.559 .600			.0809		.1186										
	.700					.0790										
٠.	.736 .800	.0581				.0519										
	.850					, 034 ?		•								
	.900		•	.0123		.0231	.0330		.0335					•		
	MACH (4)	= 4.1	600 ALPHA (5)	= 20.	000 P	INF =	.66240-0	1 0(PS1	9, = (1	8142	RN/L	*	1.2000	CPSTG	=	1.8033
	SECTION (110RB.	LOKER HING		DEPENDE	NT VARIA	BLE CP/CF	S		•						
	SA/BM	.2500	.3011 .3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980	:					
		•6500	.3011 .3000	טטטד.	.5000	.6000	. /500	.0000	.5300	. 5300						
	X/CH .000					.7390		7600		.0041						
	.001	10	.0715 .0503		.5694	.4648	.4991	.3622 .4151		.0071						
	.002					. 3586		.3678								
	.003 .004	•				.4901 .5817		. 1797 · . 4574								
	.005					.4140		.3820		1.5						
	.025 .045			.2155 .2395	.3926		.3905									
	.100			,		.3550		.3752	.2764				•			
	.153	. 1454			.2614				•							
4	.200			.1996	.6017		•				•					
	.299	.1523				÷					•					

				_
В.	٩G	_	24	ıп
	40	⊏ '	E-7	ľ

(RO3LCA)

.9980

.1312

DATE 20 APR 76	TABULATED	SOURCE DATA - 1H4			
		UPWT 1059 (IH4)	O1 ALONE	ORB. LOWER	WING
MACH (4) =	4.600 ALPHA (5)	= 20.000			
SECTION (1)OR	B. LOWER WING	DEPENDENT V	ARIABLE CP/CPS		
2Y/8W .25	00 .3011 .3480	.4000 .5000 .6	000 .7500	.8500 .95	. 00
YYCH					

X/CW .302 .428 .444 .487 .559 .600 .700 .700 .736 .800 .850 .800 .850 .850 .850 .900

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PAGE 241
DATE 20 APR 76
               TABULATED SOURCE DATA - IHW
                                                                                                     ( 15 APR 76 )
                                                                                             (RO3VCA)
                                   UPWT 1059 (IH4) OI ALONE ORB. VERT. TAIL
                · Patterna
                                                                                         PARAMETRIC DATA
            REFERENCE DATA
                                                                                                            .000
                                     .0000 INCHES
                                                                                RN/L
                                                                                            1.200
                                                                                                   BETA =
SREF = 2690.0000 SQ.FT.
                         XMRP =
LREF = 1290.3000 INCHES
                         YMRP =
                                     .0000 INCHES
BREF = 1290.3000 INCHES ZMRP =
                                     .0000 INCHES
SCALE =
            .0100
                                                                                         = 1.2100
                                                                                                      CPSTG = 1.7063
MACH ( 1) = 2.360 ALPHA ( 1) =
                                      .000 PINF
                                                               Q(PSI) = 1.8775
                                                                                  RN/L
                                                   48157
 SECTION ( 1) ORB. VERT. TAIL
                                      DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                 .5320
                         .7650
                                 .9050
 X/CV
                         . 2953
   .000
                                 .3837
           .4125
                .1257
    .300
           . 1450
                         .1104
    .500
                 1040
   .700
                 -.0410
          -.0641 -.0548 -.0358
   .900
                                                 = .48157
                                                                                  RN/L = 1.2100
                                                                                                      CPSTG = 1.7053
MACH (1) = 2.360
                      ALPHA ( 2) = 5.000 PINF
                                                               Q(PSI) = 1.8775
 SECTION ( 1) ORB. VERT. TAIL
                                      DEPENDENT VARIABLE CP/CPS
           .2990
                .5320
                         .7650
Z/BV
                                 .9050
  X/CV
   .000
                  .3172
                         .2443
                                 .3039
           .3561
                  .0950
                         .0867
    .300
           .1060
    .500
                  .0721
    700
                 -.0543
    .900
          -.0715 -.0666 -.0490
                                                                                                      CPSTG = 1.7063
                                                                                        = 1.2100
MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = .48157
                                                               Q(PSI) = 1.8775
 SECTION ( 1) ORB. VERT. TAIL
                                    DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                  .5320
                         .7650
                                 .9050
  X/CV
    .000
                  .2669
                          .1923
           .3367
                                 2493
                  .0740
           .0867
    .300
                          .0669
    .500
                  .0525
```

.900

-.0596

- .0553

-.0784 -.0715

DATE 20 APR 76	TABULATED	SOURCE DATA -	- IH4		•	•	PAGE 242
		UPWT 1059	(IH4) O1 ALONE	ORB. VERT. TA	iL	(RQ3VCA)	
MACH (1) = 2.1	360 ALPHA (4):	= 20.000 F	PINF = .48157	Q(PSI) = 14	8775 RN/L =	1.2100 CPSTG	= 1.7063
SECTION (1)ORB. Y	VERT. TAIL	DEPEND	ENT VARIABLE CP/CPS				
Z/BV .2990	.5320 .7650 .	9050					4
X/CV .000 .4338		. 1605					
.300 .0597 .500 .700	.0504 .0342 .0299 0780						
.9000985	09070722						
MACH (2) = 2.9	950 ALPHA (1) =			Q(PSI) = 1.	6163 RN/L =	1.2100 CPSTG	1.7529
SECTION (1)ORB. \	VERT. TAIL	DEPENDE	ENT VARIABLE CP/CPS				
Z/BV .2990	.5320 .7650 .	.9050					
X/CV .000 .4056 .300 .0850	.3520 .2984 . .0656 .0436	3880					
.500 .700	.0715 0072					•	
•	01870192					·	
MACH (2) = 2.9				Q(PSI) = 1.	6163 RN/L ≖	1.2100 CP5TG	1.7529
SECTION (1) ORB. \	VERT. TAIL	DEPENDE	INT VARIABLE CP/CPS				
Z/BV .2990	.5320 .7650 .	.9050	•				
X/CV .000 .3519 .300 .0908	.3146 .2296 . .0693 .0459	.3037					
.500 .700 .9000405	0189 03100202		· ·	•			
MACH (2) = 2.9	950 ALPHA (3) =	- 10.000 F	PINF = .26532	Q(PSI) = 1.	6163 RN/L =	1.2100 CPSTG	= 1.7529
SECTION (1)ORB. N	•		ENT VARIABLE CP/CPS		•		
Z/8V .2990	.5320 .7650 .	.9050					
X/CV .000 .3142	.2594 .1988 .	.2538					
.300 .314E .300 .0643	.0500 .0328			•			
.700	0359 04540346		•			•	•
	+	•					

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PAGE 243
DATE 20 APR 76
                       TABULATED SOURCE DATA - 1H4
                                   UPWT 1059 (1H4) OI ALONE ORB. VERT. TAIL
                                                                                             (RQ3VCA)
                                                                                                      CPSTG = 1.7529
MACH ( 2) =
              2.950
                      ALPHA ( 4) = 20.000 PINF = .26532
                                                               Q(PSI) = 1.6163
                                                                                   RN/L
SECTION ( 1) ORB. VERT. TAIL
                                    DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                  .5320
                         .7650
                                .9050
   .000
          .3711
                 .2140
                         .1226
          .0076
   .300
                 .0349
                         .0239
   .500
                  .0176
   .700
                 -.0498
   .900
         -.0622 -.0569
                       -.0426
MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13154
                                                               Q(PSI) = 1.2605
                                                                                   RN/L
                                                                                            1.2000
SECTION ( 1) ORB. VERT. TAIL
                                      DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                  .5320
                                 .9050
 X/CV
   .000
           .3726
                  .4564
                         .3934
   .300
           .0541
                  .0485
                         .0453
   .500
                  .0461
   .700
                 -.0059
   .900
          -.0054 -.0097 -.0142
MACH (3) = 3.700 ALPHA (2) =
                                                                                                      CPSTG = 1.7839
                                   .000 PINF
                                                  = .13154
                                                                Q(PSI) = 1.2605
                                                                                   RN/L
                                                                                         * 1.2000
SECTION ( 1) ORB. VERT. TAIL
                                      DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                  .5320
                                 .9050
                         .7650
 X/CV
   .000
           .3913
                 .3286
                         .2890
    .300
           .0400
                  .0317
                         .0245
   .500
                  .0301
   .700
                 -.0115
   .900
          -.0174 -.0145 -.0198
                                                                                   RN/L
                                                                                         = 1.2000
                                                                                                            = 1.7839
MACH (3) = 3.700 ALPHA (3) = 5.000 PINF = .13154
                                                                Q(PSI) = 1.2605
SECTION ( 1)ORB. VERT. TAIL
                                      DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                                 .9050
                  .5320
                         .7650
 X/CV
   .000
          .3347
                  .2889
                         .2158
                  .0250
    .300
           .0450
                          .0161
   .500
                  .0261
                 -.0165
   .700
   .900
         -.0248 -.0219 -.0237
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DATE 20 APR 76	TABULATED SOURCE	E DATA - IH4		PAGE 244	
	UPA	IT 1059 (IH4) OI ALONE	ORB. VERT. TAIL	(RQ3VCA)	
MACH (3) = 3.	700 ALPHA (4) = 10	.000 PINF = .13154	Q(PSI) = 1.2805 RN/L	= 1.2000 CPSTG = 1.7839	9
SECTION (1)ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990	.5320 .7650 .9050				
X/CV .000 .2910 .300 .0213 .500 .700 .9000342	.2444 .1947 .2460 .0180 .0153 .0170 0254 03130267				
MACH (3) = 3.		.000 PINF = .13154	Q(PSI) = 1.2605 RN/L	= 1.2000 CPSTG = 1.7839	:9
SECTION (1)ORB.	_	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990	.5320 .7650 .9050				
X/CV					
.000 .2792 .3000064 .500 .700	.2045 .0987 .1306 .0039 .0093 0088 0364 04010315				
	600 ALPHA (1) = -5	.000 PINF = .69240-01	Q(PSI) = ,98142 RN/L	= 1.2000	33
SECTION (1)ORB.		DEPENDENT VARIABLE CP/CP5			
Z/8V .2990	.5320 .7650 .9050	·			
X/CV .000 .2897 .300 .0399 .500 .700 .9000008	.4415 .4050 .5493 .0388 .0409 .0347 0036 00530073				
MACH (4) = 4.	600 ALPHA (2) =	.000 PINF = .66240-01	Q(PSI) = .98142 RN/L	= 1.2000 CPSTG = 1.803	13
SECTION (1)ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990	.5320 .7650 .9050			•	
X/CV .000 .3446 .300 .0272 .500 .700 .9000049	.2852 .2793 .3822 .0276 .0269 .0242 0046 00700073				

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PAGE 245
DATE 20 APR 78
                      TABULATED SOURCE DATA - IH4
                                                                                                 (RQ3VCA)
                                     UPWT 1059 (1H4) 01 ALONE
                                                                 ORB. VERT. TAIL
                                                                                                          CPSTG = 1.8033
                                                                                      RN/L
                       ALPHA ( 3) = 5.000 PINF = .66240-01 Q(PSI) = .98142
MACH ( 4) = 4.600
                                        DEPENDENT VARIABLE CP/CPS
SECTION ( 1)ORB. VERT. TAIL
Z/BV
                   .5320
                          .7650
                                  .9050
           .2990
- X/CV
           .2949
                          .1772
    .000
                   .2603
                                  .2544
    .300
           .0189
                  .0134
                          .0100
                  .0103
   .500
    .700
                 -.0154
          -.0178 -.0178 -.0178
                                                                                      RN/L = 1.2000
                                                                                                          CPSTG = 1.8033
MACH (4) = 4.600
                       ALPHA (4) = 10.000 PINF = .86240-01 Q(PSI) = .98142
 SECTION ( 1)ORB. VERT. TAIL
                                        DEPENDENT VARIABLE CP/CPS
Z/BV
           .2990
                          .7650
                                  .9050
                   .5320
 X/CV
    .000
           .2219
                   .2100
                          .1704
                                  .2169
           .0106
                  .0160
    .300
                          .0167
    .500
                  .0137
   .700
                  -.0104
          -.0137 -.0131 -.0110
                                                                                      RN/L = 1.2000
                                                                                                          CPSTG = 1.8033
                       ALPHA (5) = 20.000 PINF = .66240-01 Q(PSI) = .98142
MACH : ( 4) =
              4.600
 SECTION ( 1) ORB. VERT. TAIL
                                        DEPENDENT VARIABLE CP/CPS
Z/9V
                                  .9050
            .2990
                   .5320
                           .7650
 X/CV
           .1490 .2125
.0029 -.0009
    .000
                           .055B
                                  .0716
    .300
                           .0069
                  -.0066
    .500
    .700
                  -.0164
```

-.0161 -.0175

.900

-.0137

PAGE 248

• •				UPW	T 1059 (1	H4) 01	ALONE	ORBITE	R FÜSELA	GE		(RQ3B	CB) (15 APR	76)
	REFE	RENCE DA	TA				•	•			1	PARAMETRI	C DATA		
LREF = 1	0000.000 0002.009 0002.009 0100	INCHES		= ,	0000 INCH 0000 INCH 0000 INCH	ES				RN	/L =	3.000	BETA	2	.000
MACH (1)	= 2.	360 AI	_PHA (13	=	.000 PI	NF =	1.1978	Q(PSI) = 4.60	8 98	RN/L :	= 3.0000	CP	STG =	1.7063
SECTION (LIORBIT	ER FUSEL	AGE .		DEPENDEN	IT VARIA	BLE CP/CP	S	•						
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0000	.1000	. 1250	.1500	.1600	. 1650	.1700	, 1750	. 1800
PHI .000 10.000 20.000 24.500 39.000	.9947	.5293	.1913	.1088	•	.0683	.0401	.0256 .0243 .0256 .0270 .0728		.0053				7000	
163.000 174.000 180.000	.9947				.2574			.2024	. 1967	.2243	.6274	.6581	.6424	.3890	.5591
X/LÐ	2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI	16500	. 2000	11000	.5000	,6555	. 1050	.0000	.0000	.020		12200	12220		*******	
.000 .000	.0000	.0035 .0008	.0102	.0072	.0078	•	.0115				0241		0295	0327	
24.000 31.500	.0050 .0104											•			
33.100 35.000	0104	0016				•				•					
40.000 45.000	.0125	0055 0108													
50.000 51.600	.0368		,										.0127		
57.000 60.900 65.000		0047 0126 0169													
69.000 69.000		0234											0202		•
79.300 95.500					0148 0089		0024				•		•	•	
95.700 96.300	.0366	0306													
103.000 105.000					0074										0571
112.600 117.500					0056				•			0078		0864	,
120.800 127.900 129.500						.2008		.2325	.1109						•

DATE 20 A	PR 76		TABULATE	D SOURC	E DATA -	IH4								PAGE	247
es ^{ort} ed.				UPW	T 1059 (IH4) 01	ALONE	ORBITE	ER FUSEL.	AGE		(RO3E	ICB)		
MACH (1) = 2.	.360 AI	LPHA (1)	=	.000										
SECTION	(1)ORBIT	TER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	8620	.9500	.9630	.9750	1.0000	1.0145
PHI 130.000 135.000 139.600		0721			0094				164 I 1724	.0342		.0270		•	· · ·
144.000 155.000 180.000	.1354 .0497	0362			0167	•				•		.0513		•	
X/LB	1.0250	1.0500			•		•								
1H9 000.	0323	0340		•	•										
MACH (1) = 2.	360 At	LPHA (2)	= 5	.000 P	INF =	1.1978	Q(PS)	D = 4.1	6698	RN/L -	3.0000	CP	STG =	1.7063
SECTION	(110RBI1	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	25							
X/LB	.0000	.0050	.0200	.0400	.0500	.0800	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI -000 10:000 20:000 24:500 39:000	.9963	.6198	.2623	.1658		.1174	.0829	.0644 .0633 .0647 .0650		.0389					
163.000 174.000 180.000	.9963				.1690			.0797	.1408	.1630	.5172	.5690	.5432	.3320	.4728
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 .000 23.000	.0263	.0269 .0250	.0339	.0302	.0281		.0385				.0034		0015	0045	
24.000 31.500 33.100	.0342	.0283		*										•	
35.000 40.000 45.000 50.000	.0421 .0473 .0527	.0291 .0337										•			
51.600 57.000 60.900	.002/	0124 0152											0152		•
65.000 68.000		0160		*.			:				•		0550		

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PAGE 248

DATE 20 AP	R 76		TABULATE	D SOURC	E DATA -	IH4								PAGE	248
				UPW	T 1059 ()	10 (#H)	ALONE	ORBIT	ER FUSEL.	AGE		(RQ3E	BCB)		
MACH (1)	= 2.	360 AL	PHA (2)	= 5	.008							•	•		
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	NT VARIA	ELE CP/CF	PS .							
X/LB	.2000	.3000	4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH! 69.000		0187			0770				-						
79.300 95.500 95.700		0248	* . . ·		0336 0301		0173								
96.300 103.000 105.000	.0337				0294							·			0719
112.500 117.500 120.800 127.900					0294	.1009			.1002	. •		0281		0285	
129.500 130.000 135.000		0864			0217	.1003		. 1574	.1320	.0217		.0061			
139.600 144.000 155.000	.1100	-,0604				•			.1191			.0257			
180.000 X/LB	.0187	0586 1.0500		• .	0204			•							
PHI .000	0030														
MACH (1)	= 2.	360 AL	PHA (3)	= 10	.000 PI	INF =	1.1978	QIPS	1) = 4.0	5698	RN/L	= 3.0000	CP:	STG =	1.7063.
SECTION (IDORBIT	ER FUSELA	\GE		DEPENDEN	NT VÄRIA	BLE CP/CF	?S			-	·			
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000	.9950	.7175	.3496	.2384		. 1814	.1419	.1192 .1167 .1164		.0868		•			•
24.500 39.000 163.000								.1118 .0855				******		.2789	
174.000 180.000	.9950			•	.1286			.0900	.0974	.1112	.4051	,4894	.4402		.3832
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	.0671	.0606 .0592	.0576	.0648	.0633		.0714				.0388		.0351	.0327	

DATE 20 APP	₹ 76		TABULATE	D SOURCE	DATA -	IH4								PAGE	249
				บฅพ	T 1059 (1	(H4) O1	ALONE	ORBITE	R FUSELA	GE		(RQ3	3CB)		
MACH (1)	= 2.	360 AI	LPHA (3)	= 10	.000										
SECTION (DORBIT	ER FUSEL	AGE,		DEPENDEN	NT VARIA	BLÆ CP/CF	s			٠.				
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.0290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 24.000 31.500 33.100 35.000 40.000 50.000 51.600 57.000 60.900	.0726 .0756 .0762 .0743	.0630 .0622 .0693										•	~.0631		
65.000 68.000 69.000 79.300 95.500 95.700 96.300	.0531	0206 0225 0228			0384 0401 0446		0624			·	."		0783		
105.000 112.500 117.500 120.800 127.900 129.500 130.000 135.000		0949			0572	.0382		.0660	.0774 .0623	0128		0507 0144		0477	0810
144.000 155.000 180.000 X/LB PHI .000	.0913 0090 1.0250	0746 1.0500			0229				• 6000	•		0116			¥

DATE EQ ACT	. 10		INDULATE	D SOURCE	L DATA -	1117								· nou	
1				UPW	T 1059 (1	H4) 01	ALONE	ORBIT	ER FUSEL	AGE		(RQ3)	BCB)		
MACH [1]	= 2.3	360 AI	_PHA (4)	= 20	.000 PI	NF =	1 1978	Q(PS	I) = 4.	6698	RN/L	= 3.000	0 CF	STG =	1.7063
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLI: CP/C	PS						-	
	1.						•					4.500	4500		.1800
X\LB	.0000	.0050	.0200	.0400	.0500	.0600	0800	.1000	.1250	.1500	.1608	. 1650	.1700	. 1750	.1800
PHI															
.000	.9290	.8744	.5460	.4094		. 3394	5850	.2526		.2082					
10.000					•			.2488					. ,		
20.000 24.500		•			,			.2406 .217B							
39.000								.0764							
163.00D														.1052	
174.000	-							0700	0700	01.11.	0050	.2027	.2621		.2349
180.000	.9290				.0348		٠.	.0329	.0382	.0414	.0959		.6061		,E373
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.0000	.8050	.8290	.8620	,9500	.9630	.9750	1.0000	1,0145
CHAN							•			•					
PHI .000	. 1791	.1646	.1748	.1710	.1710		.1884				.1431		. 1404	.1395	
23.000		. 1570	.1710												•
24.000	.1736														
31.500	.1619														
33.100 35.000	.1505	.1532		•				-							
40.000	.1121	. 1380													
45.000		.1328					•								
50.000	.0462								٠.				1085	* .	
51.600 57.000		0459											w.1000		
60.900		0353				,									•
65.000		0295					•								
68.000 69.000		0286					•						1118		
79.300			1		0996			•						•	
95.500					0489		1167								
95.700		0335							4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -						
96.300 103.000	.0190	•			0429					• •					
105.000					0765		-		•			•			0998
112.600	· .			•	-,0591										
117.500									A-100			0907		→.0875	
120.800 127.900	.*			•		.0210			.0373						
129.500								.0495							. :
130.000					_	•			.0150	0653		0670			
135.000		1006			0910				Anne			•	N .		
139.600 144.000									0085			0804			
155.000	.0222														
180.000	0490	0889			0522										
														•	

DATE 20 APR 76

112.600 117.500 120.800

TABULATED SOURCE DATA - IH4

-.0028

PAGE 251 UPWT 1059 (1H4) 01 ALONE ORBITER FUSELAGE (RQ3BCB) MACH (1) = 2.360 ALPHA (4) = SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 .1463 .1445 MACH (3) =2.950 ALPHA (1) == .000 .66350 Q(PSI) = 4.0417RN/L 3.0200 CPSTG = 1.7529PINE SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 . 1650 .1700 .. 1800 PHI .000 .9980 .0302 .5142 .1869 1053 .0672 .0430 .0132 10.000 20.000 .0312 24.500 39.000 163.000 .0331 .0792 .3819 174.000 .6629 .6473 180.000 .9980 .5954 .2412 .1895 .1847 .2111 .5910 X/LB .2000 .3000 .4000 .5000 .6000 .7800 1.0000 1.0145 .8000 .8290 .9500 .9630 .9750 .8050 PHI .000 23.000 24.000 .0054 .0054 -.0188 -.0217 .0052 .0037 .0053 .085 -.0147 .0035 .0106 31.500 .0144 33.100 .0030 35.000 40.000 45.000 .0153 .0012 .0179 50.000 51.600 57.000 .0392 .0097 -.0047 60.900 -.0050 65.000 -.0079 68.000 -.0168 69.000 -.0087 79.300 95.500 95.700 -.0097 -.0044 -.0056 -.0131 96.300 103.000 105.000 .0340 -.0034

-.0535

.0032

.0054

.0991

(BUZECE)

				UPW	T 1059 (1	(H4) 01 /	ALONE	ORBIT	ER FUSEL/	AGE		(RQ38	CBI		
MACH (2)	= 2.	950 AL	LPHA (1)	=	.000	*							·		
SECTION (IJORBIT	ER FUSEL/	AGE		DEPENDEN	NT VARIĀR	BLE SP/C	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8300	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 127.908 129.500 130.000 135.000 139.600 144.000 155.000	. 1493 . 0888	0422			0087	. 1425		. 1894	.1483 .1510	.0367		.0129			
X/LB	1.0250	1.0500													
PH!	0220	0239					-		•						
MACH (2)	= 2.	950 AL	LPHA (2)	= 5	.000 P1	NF =	.66350	Q(PS	1) = 4.0	0417	RN/L =	3.0200	CP	5TG =	1.7529
SECTION (110RBIT	ER FUSEL	AGE		DEPENDEN	T VARIA	BLE CP/C	P5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	.1650	.1700	.1750	.1800
PH1 .000 10.000 20.000 24.500 39.000 163.000 174.000	1.0052	.6093	.2521	.1567	. 1761	.1109	.0815	.0636 .0702 .0715 .0711 .0846	. 1266	.0400	.4516	.5402	.5106	.3078	.4715
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.enoo	.8050	.8290	.8620	.9500	.9630	9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 35.000 46.000 45.000 50.000 51.600	.0291 .0355 .0400 .0421 .0466	.0258 .0255 .0288 .0307 .0359	.0344	.0336	.0332		.0315				.0049		.0004	0023	
57.000 60.900		0050 0054													

DATE 20 AP	P 76		TABULATE	D SOURCE	E DATA -	- IH4								PAGE	253
		•		UPW	T 1059 ((184) 01	ALONE	ORBITE	R FUSELA	AGE		(RQ3	BCB1		
MACH (2)	= 2.	950 A	LPHA (2)	= 5	.000							.*			
SECTION (1)ORBI1	ER FUSEL	AGE		DEPENDE	ENT VARIA	BLE CP/Cf	°s							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 65.000 68.000 89.000 79.300		0080			0185	,÷							-,0335		
95.500 95.700 96.300 103.000	. 0533	0133			0193		0159								• •
105.000 112.600 117.500 120.800					0242				.0832			0096	. •	0123	0577
127.900 129.500 130.000						.0715		.1298	.1147	.0223		.0054	•	٠	
135.000 139.600 144.000 155.000	.1159	0527			0206				.0930			.0210			
180.000 X/LB	.0518	- 0367 1.0500			0215		•						2. *		
PHI .000		0037													
MACH (2)) = 2.	950 A	LPHA (3)	= 10	.000 F	PINF =	.66350	Q(PS	[) = 4.(3417	RN/L	= 3.020	g CF	'STG =	1.7529
SECTION ((I)ORBI	ER FUSEL	AGE		DEPENDE	ENT VARIA	ABLE CP/C	-s							
X/LB	.0000	.0050	.0200	.0400	. 0500	.0600	.0810	.1000	. 1250	. 1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500	1.0008	.7060	.3339	.2241		. 1694	.13?3	.1114 .1089 .1092 .1059		.0800	•				
39.000 163.000 174.000 180.000	1.0008				.1171			.0791	.0869	.0975	.3073	.4084	.3884	.2381	.3591
			•												

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UPHT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

SECTION	(1)ORBIT	ER FUSEL	AGE		DEPENDEN	T VARIA	BLE CP/C	P5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0149
PHI															
.000	.0615	.0517	.0596	.0601	.0606		.0643				.0337		.0292	.0268	
23.000		.0511													
24,000	.0655					•							•		
31.500 33.100	.0680	OFF					**								
35.000	.0686	. 0545													
40.000	.0668	.0551													
45.000	. 0008	.0612													
50.000	.0526														
51.600		4											0543		
57.000		~.0122													
60.900		0125													
65.000		0133											01.01		
68.000 69.000		0135											0481		
79.300		0135			0271										
95.500					0262		0415								
95.700		0138			.0202		.0413								•
96.300	.0466	.0.00													
103.000	*				0289										
105.000								•							0642
112.600					0382						•				
117.500											•	0339		0347	
120.800									.0725	-		-		-	
127.900						.0071					1,2				
129.500								.0374							
130.000		2244			2505				.0460	0109		0175			
135.000 139.600		0611			0525				.0202						
144.000									·ucuc			0024			
155.000	.0885					٠.						.0004			
180.000	.0205	0498			0230										
100.000										•					
X/LB	1.0250	1.0500					,								
PHI															
.000	.0283	.0276													

DATE 30 APR 76

-.0600

-.0210

180.000

TABULATED SOURCE DATA - 1H4

-.0489

PAGE 255 (RO3BCB) UPWT 1059 (IH4) 01 ALONE ORBITER FUSELAGE MACH (2) = 2.950 ALPHA (4) = 3.0200 CPSTG = 1.7529 20.000 Q(PSI) = 4.0417SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .1800 .1700 .1750 .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .000 ,9335 .8650 .5183 .3852 .3177 .2669 .2394 .1978 10.000 .2363 24.500 39.000 .2103 .0784 163.000 .0525 174.000 .1009 180.000 .1854 .1756 .9335 .0374 .0294 .0344 .0414 .0551 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .2050 .8290 .6620 .9500 .9630 .9750 1.0000 1.0145 .000 .1724 .1568 .1215 .1056 .1608 ,1627 .1637 . 1755 .1149 23.000 .1509 24.000 .1672 31.500 33.100 .1558 .1408 35.000 .1450 .1127 40.000 . 1298 45,000 .1252 50.000 .0426 51.600 -.0719 -.0349 57.000 60.900 -.0204 65.000 -.0163 68.000 -.0739 69.000 ~.0165 79.300 -.0687 95.500 95.700 -.0344 ...0731 -.0215 96.300 .0191 103.000 -.0280 105.000 -.0720 112.600 -.0369 117.500 -.0597 -.0588 120.800 .0468 127.900 -.0062 129.500 .0287 130.000 -.0521 ,0067 -.0457 135.000 -.0655 -.0673 139.600 ~.0112 144.000 -.0543 155.000 .0133

UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (2) =2.950 ALPHA (4) = 20.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 .1191 .1165 CPSTG = 1.78393.0000 MACH (3) =3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PS1) = 3.1538 RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1700 .1750 .1800 X/LB .1250 .1500 .1600 . 1650 .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 PHI .000 -.0170 .9470 .3246 .0849 .0321 .0098 -.0025 -.0103 -.0129 10.000 20.000 -.0146 24.580 -.0161 39.000 163.000 .0483 .5448 174.000 .9434 .9805 .8971 180.000 .9470 .3818 .3226 .3177 .8668 . 3555 1.0145 .9530 .9750 1.0000 X/LB .8050 .0290 .8620 .9500 .2000 .3000 .4000 .5000 .6000 .7800 .8000 PHI -.0351-.0376 -.0377 .000 -.0195 -.0152 -.0132 -.0154 -.0156 -.0199 23.000 -.0380 24.000 -.0276 31.500 33.100 -.0279 -.0389 35.000 40.000 -.0325 -.0377 -.0415 45.000 -.0423 50.000 .0217 .0517 51.600 57.000 .0177 60.900 .0060 65.000 -.0015 .0270 68.000 69.000 -.0056 79.300 .0227 95.500 95.700 0152 .0268 -.0096 96.300 .0415 103.000 105.000 .0210 -.0363 112.600 -.0001 .0225 117.500 .0162 .0594 120.800

DATE 20 AP	'R 76		TABULAT	ED SOURCI	E DATA -	144								PAGE	257
				UPN	T 1059 ((H4) OI	ALCNE	ORBIT	ER FUSEL	AGE		(RQ3	BCB)		
MACH (3)		700 A	LPHA (1) = -10	.000										
SECTION (1)ORBITE	ER FUSEL	AGE		DEPENDEN	NT VARIA	BLE CP/CF	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 127,900 129,500 130,000 135,000 139,600 144,000 155,000	.2390	0104	•		.0088	. 2 122	·	.2142	.1146	.0341		.0164	•	•	
180.000	.2143	.0241			.0239									-	
X/LB	1.0250	1.0500													•
PH1 .000	0394	0396													
MACH (3)	= 3.7	700 A	LPHA (2) = -5	.000 PI	INF =	.32910	QIPS	1) = 3.	1538	RN/L	3.000	0 CP	STG =	1.7839
SECTION (1) ORBITE	ER FUSEL	AGE		DEPENDEN	NT VARIA	BLE CP/CF	- 5							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	. 1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000	.9759	.3980	. 1253	.0591	·	.0305	.9136	.0037 .0017 .0017 .0026 .0553		0073		.8086		.4579	
180.000	.9759				.3023			.2439	.2382	.2702	.7117		.8128		.7681
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	. 3000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 35.000 40.000 45.000	0110 0119 0113 0151 0191	0122 0168 0223 0269 0307	0098	0105	0116		3103		,		0262		0291	0294	
50.000 51.500 57.000 60.900	.0220	.0039											.0254		

39.000

163.000

174.000

180.000

.9813

.2242

,3681

.6197

.6502

.6472

.5485

.1947

UPWT 1059 (1H4) 01 ALONE ORBITER FUSELAGE (RQ3BCB) MACH (3) = 3.700 ALPHA (2) =SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .9750 1.0000 1.0145 .2000 .3000 .4000 .5000 .6000 .7800 .F'000 .8050 .8290 .8620 .9500 .9830 PHI 65.000 -.0054 68.000 .0100 69,000 -.0097 79.300 .0059 95.500 .0067 .0073 95.700 -.0051 96.300 .0352 103.000 .0025 -.0379 105.000 112.600 .0016 117.500 .0040 .0088 120.800 .0801 127.900 .2224 129.500 .2090 130.000 .0395 . 1460 .0071 135.000 -.0069 .0020 139.600 .1630 144.000 .0332 155.000 . 1949 .1540 180.000 .0001 .0006 X/LB 1.0250 1.0500 PHI .000 - 0310 - 0320 MACH (3) = ALPHA (3) = CPSTG = 1.7839 3.700 .000 PINF .32910 Q(PS1) = 3.1538RN/L 3.0000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .1800 .0000 .0050 .0200 .0900 .0500 .0600 .0300 .1000 .1250 .1500 .1600 .1650 .1700 .1750 PHI .000 .9813 .4855 .1761 :0964 .0599 .0373 .0249 .0087 10.000 .0229 20.000 .0243 24.500 .0263

.0517

.1722

PAGE 259

DATE 20 APR 76

TABULATED SOURCE DATA - IH

		•		UPW.	T 1059 (1	H4) 01 .	ALONE	ORBITE	ER FUSELA	4GE		(RQ3	EC8)		
MACH (3)	= 3.	700 AI	LPHA (3)) = ,	. 000										
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDEN	T VARIA	BLE CP/CF	s							
X/LB	.2000	.3000	.4000	.5000	.6006	.7800	.8000	.8050	.0290	.8620	.9500	.9530	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500	.0014 .0043 .0078	0009 0023	.0015	.0003	.0002		.0033		- -		0137		0166	0182	-
33.100 35.000 40.000	.0078	0038													
45.000 50.000 51.600 57.000	.0281	0019											.0018		
60.900 65.000 68.000 69.000		0021 0026 0088											0138		
79.300 95.500 95.700 96.300	.0396	0082			0062 0051		0102						,		
103.000 105.000 112.600	.0520				0058 0073										0424
117.500 120.800 127.900 129.500						.0882		1750	.0869			.0064		.0107	
130.000 135.000 135.600		0241			0118			.1359	. 1264 . 1344	.0399		.0019			
144.000 155.000 180.000	.1522	0086			0092							.0156			•
X/LB	1.0250	1.0500		,							•				
PHI	0104	0201													

.000 -.0187 -.0201

DATE ED AFT	7 10		INDULATE	D SOURCE	E DATA -	#FIT									
				UPW	T 1059 (1	H4) 01	ALONE	ORB1TE	R. FUSELA	GE		(RQ3	308)		
MACH (3)	= 3.	700 AL	PHA (4)	= 5	.000 PI	NF =	.32910	Q(PSI	1 = 3.1	538	RN/L :	= 3.000) CP:	STG =	1.7839
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	s							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.8830	1000	. 1250	. 1500	. 1600	.1650	.1700	. 1750	. 1800
PHI .000 10.000 20.000 24.500 39.000	.9881	.5883	.2412	. 1469		. 1025	.07 ?9	.0572 .0546 .0563 .0578 .0679		.0346		·		.2791	
163.000 174.000 180.000	.9881				. 1599			.1144	.1149	. 1334	.3829	.4818	.4878		.4705
X/LB	.2000	7000	.4000	.5000	.6000	.7800	.80/10	.8050	.8290	.6650	.9500	.9630	.9750	1.0000	1.0145
	.6000	.3000	.4000	. 5000	.0000	. 7000		.5555	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
PH1 .000 23.000	.0227	.0163	.0186	.0189	.0186		.0219				.0015		0020	0043	
24.000 31.500	.0262 .0297														
33.100 35.000	.0308	.0189													
40.000 45.000	.0349	.0212 .0250													
50,000 51,600	.0386	10200											0244		
57.000 60.900 65.000 68.000		0008 0010 0010											0181		
69.000 79.300		0038			0132										
95.500 95.700		0093			0135		01fi5						_		
96.300 103.000	.0449				0146										0421
105.000 112.600 117.500				•	0176							.0005		0015	
120.800 127.900				-	•	.0374			.0567						
129.500 130.000								.0890	.0903	.0205	•	0003			
135.000 139.600 144.000		0303			0200				.0757			.0076			
155.000 180.000	.1121	0227			0211									,	

PAGE 251 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ39CB) UPNT 1059 (1H4) O1 ALONE ORBITER FUSELAGE MACH (3) = 3,700 ALPHA (4) =5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 .000 -.0045 -.0060 3.0000 CPSTG = 1.7839MACH (3) = 10.000 .32910 Q(PSI) = 3.1538RN/L 3,700 ALPHA (5) =PINF SECTION (I) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 X/LB .1500 .1600 .1650 .1700 .0000 .0050 .0200 .0400 .0500 .0600 .0200 .1000 .1250 PH1 .1001 .0978 .0987 .0964 .0720 .000 .0717 .9867 .6839 .3159 .2076 . 1554 .1203 10.000 20.000 24.500 39,000 . 1959 163.000 .3045 174.000 .3441 180.000 .0710 .0802 .0894 .2215 .3524 .9867 .1096 .9750 1.0000 1.0145 X/LB .9500 .9630 .2000 .3000 .4000 .6000 .7800 .8000 .8050 .8730 .8620 .5000 PHI 23.000 24.000 31.500 33.100 35.000 40.000 .0161 .0196 .0555 .0445 .0495 .0510 .0511 .0540 .0241 .0442 .0572 .0587 .0474 .0587 .0575 .0482 .0529 50.000 .0450 51.600 57.000 -.0406 -.0061 57.000 50.900 65.000 69.000 79.300 95.500 -.0063 -.0062 -.0317 -.0079 -.0207 -.0222 -.0252 95.700 96.300 -.0083 .0396 103.000 -.0225 -.0456 105.000 112.600 117.500 -.0234 -.0170 -.0286 120.800 .0625

DI. 12 M.O. P.I.			INDULNIE			••••								· - •	
				UPW	T 1059 (IH4) O1	ALONE	ORBIT	ER FUSEL	AGE		(RQ3E	ICB)		
MACH (3)	. 5.1	700 AL	LPHA (5)	.= 10	.000										
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/CF	2 5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI 127.900 129.500 130.000 135.000 139.600 144.000 155.000	.0730	0363			0322	0097		.0250	.0427 .0014	0079		0145 0080			
X/LB	1.0250	1.0500				ı									
PHI .000	.0179	.0162							-			•.			
MACH (3)	= 3.1	700 AL	PHA (6)	= 20	.000 P	INF =	.32910	QtPS	[) = 3.	1539	RN/L	= 3.0000	CP	STG =	1.7839
SECTION (1)ORBITE	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/CF	'S							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000 180.000	.9350	.8579	.5009	.3683	.0387	.3007	. 2541	.2274 .2244 .2194 .2023 .0759	.0304	.1870	.0405	.0610	.1092	-0350	.1387
X/LB	.2000	.3000	4000	.5000	.6000	.7800	.8800	.8050	.0290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 33.100	.1622 .1565 .1527	.1432 .1378 .1332	. 1479	.1513	.1552	; °	1667	•			.1117		.1033	. 0924	
35.000 40.000 45.000 50.000 51.600 57.000	.1428 .1072 .0422	.1256											0441		
57.000															

DATE 20 APP	₹ 76		TABULATE	SOURCE	E DATA +	IH4								PAGE	263
				UPW	T 1059	IH4) 01	ALCNE	ORBITE	R FUSEL	AGE	•	(RO3)	BCB)		
MACH (3)	= 3.	700 A	LPHA (6)	= 20	.000										
SECTION (LIORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	PS							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8520	.9500	.9630	.9750	1.0000	1.0145
PHI 65.000 68.000	:	0125								·			0435		
69.000 79.300 95.500		0125	•	٠	0420 0179		0448			• • • •	•	÷			
95.700 96.300 103.000 105.000	.0209	0125			0171										0458
112.600 117.500 120.800					0236				.0427			0331		0340	
127.900 129.500 130.000						0245		.0316	.0039	0282		0351			
135.000 139.600 144.000 155.000	.0126	0418			0404				0197			0369			
180.000	0060	0340	•		0352										
X/LB	1.0250	1.0500											•		
PHI .000	.1022	.0953									•				
MACH (4)	± 4:	600 A	LPHA (1)	= -10	.000 P	INF =	. 16595	Q(PS	1) = 2.	4580	RN/L	= 3.010	D CP	STG ×	1.8033
SECTION (1)ORBIT	ER FUSEL	AGE,		DEPENDE	NT VARIA	ABLE CP/C	P\$	-	,					•
X/LB	.0000	.0050	.0200 -	.8400	.0500	.0600	.0860	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
10.000 20.000 24.500	.9561	.3304	.0920	.0397		.0180	.0179	.0009 8200 8200 8500		0058				•	·
39.000 163.000								• 0255				.9885		.5586	
174.000 180.000	.9561				.3732			.3130	.3084	.3492	.87 77	. 5555	1.0258		.9771

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DATE	20 APF	76		TABULAT	ED SOURC	E DATA -	144				•				PAGE	264
					UPA	NT 1059 (IH4) O1	ALONE	ORBITE	ER FUSEL/	\GE		(RQ3	BCB)		
MACH	(4)	= 4.	600 A	LPHA (1) = -10	0.000										
SECT	ION (1)ORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/C	PS							
X/LB		.2000	.3000	.4000	.5000	.6000	.7800	.2000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH I 23.	000 000	0085	0070 0190	0120	0112	0118		0085		•		0212		0228	~. 0234	
24. 31. 33.	000 500 100	0126 0107	0171		•								•			
35. 40. 45.	000 000 000		0198 0205													
51. 57.	000 600 000 900	.0265	.0141 .0141											.0337		
65. 68.	000 000 000		.0132											.0227		
79. 95.	300 500 700	•	.0002			.0115 .0132		.0143								
96. 96. 103. 105.	.300 .000	.0418	.00,02			.0170					·.					0236
112. 117. 120.	.600 .500				•	.0083			٠	.0523			.0106		.0129	
127. 129. 130.	.500 .000						.1737		.1981	.1137	.0267		.0173			
	.600 .000	21.00	0061			.0152				.1568			.0592			
	.000 .000	.2492 .1579	.0314			.0307			•	:			,			•
X/L8		1.0250	1.0500		•								•			

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DAT	E 20 AP	R 76		TABULAT	ED SOURC	E DATA -	IH4								PAGE	265
					UPW	IT 1059 (IH4) 01	ALONE:	ORBITE	ER FUSELA	\GE		(RQ3	BCB)		
MAC	H (4)	= 4 '.	600 A	LPHA (2	?) = - 5	6.000 P	INF =	. 16595	Q(PS	() = 2.4	·580	RN/L	= 3.010	O CF	STG =	1.8033
SE	CTION (DORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE (P/CF	' S							
X/L	В	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	. 1650	.1700	.1750	. 1800
1 2 2 3	HI .000 0.000 0.000 4.500 9.000 3.000	.9900	.4075	.1316	.0650	•	.0366	.0199	.0103 .0078 .0089 .0107 .0570	· ·	E000				.4745	
17	4.000 0.000	.9900				.2904			. 2326	.2289	.2622	.7073	.8441	.8644		.8371
X/L	8	.2000	.3000	4000	.5000	.6000	.7800	.8000	8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	HI .000 3.000	0044	0069 0113	0066	0067	0109		0080	r			0190		0209	0206	
33333	4.000 1.500 3.100 5.000	0062 0033	0117	- •												
¥ 5	0.000 5.000 0.000 1.600	0095 .0247	0161 0187											.0104		
. 6 6	7.000 0.900 5.000 8.000		.0070 .0070 .0010											.0029		
· 7	9.000 9.300 5.500 5.700		0019			.0046 .0016		.0038	4			·				
9 10 10	6.300 3.000 5.000 2.600	.0432				0064 0067		٠.		•			·			0272
11 12 12	7.500 0.600 7.900					uud/	. 1754			.0794			.0004		.0008	
18 13 13	9.500 0.000 5.000 9.600 4.000		0036			.0030			.2004	.1378	.0390	•	.0010			
15	5.000 0.000	.2073 .1712	.0028			.0083	:									

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (4) = 4.500 ALPHA (2) = ~5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 -.0218 -.0225 1,8033 3.0100 CPSTG MACH (4) = 4.600 ALPHA (31 = PINF . 16595 Q(PSI) = 2.4580RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .1650 .1700 .1750 .1800 .1000 .1250 .1500 .1600 .0000 .0050 .0200 .0400 .0500 .0600 .0800 PHI .000 10,000 .9958 .4930 . 0636 .0410 .0292 .0137 .1816 .0994 .0270 20.000 .0281 24.500 39.000 .0310 .0627 163.000 .3647 174.000 .6307 .6653 .6600 180,000 .9958 .1849 .5097 .2148 .1613 .1601 X/LB .2000 .8000 .8050 .8290 .8620 .9500 . 9630 .9750 1.0000 1.0145 .3000 .5000 .6000 .7800 .4000 PHI -.0133 -.0125 .000 .0053 .0016 .0034 .0029 -.0011 .0041 -.0105 23.000 .0001 24.000 31.500 33.100 35.000 40.000 .0071 .0115 .0012 .0108 .0134 -,0006 45.000 50.000 -.0006 .0292 51.600 57.000 -.0032 .0070 60.900 .0070 65.000 .0069 -.0062 68.000 69.000 .0005 79.300 -.0030 95.500 -.0074 ~.0033 95.700 96.300 103.000 -.0035 .0442 -.0052 -.0260 105.000 112.600 -.0065 .0070 117.500 .0035 120.800 .0808

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DATE 20 AF	PR 76		TABULATE	D SOURC	E DATA -	IH4					•	•		PAGE	267
				. UPW	IT 1059 (10 (#HI	ALONE	ORBIT	ER FUSEL/	AGE		(RQ3	BCB)		
MACH (4)	1 = 4.6	500 AL	.PHA (3)	•	.000				• •			· :			-
SECTION	110RBITE	ER FUSELA	/GE		DEPENDE	NT VARIA	BLE CP'C	PS .							•
X/LB	.2000	.3000	.4000	.5000	.6000	7800	.8000	.8050	.0290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI 127.900 129.500 130.000 135.000 139.600		0100			0097	.0536		.0779	.0953	.0397		.0020			
144.000 155.000 180.000	. 1544 . 1233	0048			0057							.0098			
X/LB	1.0250	1.0500					•								
PHI .000	0148	0162								. •	٠				
MACH (4)) = 4.6	500 - AL	PHA (4)	= 5	.000 P	INF =	. 16595	Q(PS)	() = 2.4	:58 0	RN/L	= 3.010	0 CP	STG =	1.8033
SECTION (LIORBITE	R FUSELA	GE		DEPENDE	NT VARIA	BLE CP/CF	s						•	
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.080t	.1000	. 1250	.1500	.1600	.1650	.1700	.1750	. 1800
PH1 .000 10.000 20.000 24.500 39.000 163.000	.9961	. 5936	.2453	. 1478		. 1024	.0743	.0582 .0563 .0582 .0604 .0673		.0368				.2536	•
174.000 180.000	.9961			•	.1519			1051	.1097	.1237	.3120	.4041	.4762		.4791
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 33.100	.0243 .0269 .0306	.0170	.0172	.0167	.0156		.0202			•	.0018		0016	0020	
35.000 40.000 45.000 50.000 51.600	.0313 .0346 .0372	.0218 .0254								•		•	0202		
57.000 60.900		.0024 .0025				r		•		-					

CATE 20 AF	R 7ò		TABULAT	ED SOURC	E DATA -	114		•						PAGE	26B
				UPA	IT 1059 (1	H4) 01	ALONE	CRBITE	R FUSELA	IGE:		(RQ3B	CB)		
MACH (4)	= 4.	600	ALPHA (4) = 5	5.000										
SECTION (1)ORBIT	ER FUSEL	_AGE		DEPENDEN	IT VARIA	BLE CP/CP	s			•		•		
X/LB	.2000	.3000	.4800	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 55.000 68.000 69.000 79.300 95.500 95.700 96.300 103.000	.0426	.0024 .0022 0047			0117 0122 0135		0136						0877		0293
112.600 112.600 120.800 127.900 129.500 130.000 135.000		0188			0158 0177	.0146		.0454	.0475 .0561	.0162		0016 0083		0009	
139.600 144.000 155.000 180.000	.1021 .0798	0082			0154				.0452			0031			
X/LB	1.0250	1.0500													
PHI .000 MACH (4)		0063	ALPHA (5	i) = 16	3.000 PI	inf #	.16595	Q(PS:	1) = 2.	4580	RN/L	= 3.0100) CP	STG =	1.8033
SECTION	1)ORB17	ER FUSE	LAGE		DEPENDEN	NT VARIA	ABLE CP/CF	es			•				
× X/LB	.0000	.0050	.0200	.0400	.0500	.0600	0800	.1000	. 1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI ,000 10.000 20.000 24.500 39.000 163.000 174.000	007B	.0471	0076	0088		0270	0578	.0541 .4439 .5494 .2300 .1685		.0557		. 1597		.0528	
180.000	0078			•	.1341			. 1154	.0834	.0569	.0419		.0291		.2557

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4

PAGE 269

				UPW	T 1059 (1	H43 D1	ALCNE	ORBITE	R FUSEL/	AGE		(RQ36	ICB)		
MACH (4)	ı = 4,	60 0 Al	_PHA (5)	= 10	.000										
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	2 5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000	.0626	.1233	.1288	.0768	.0781		.0856				.0222		.2194	.1107	
31.500 33.100	.4897	.2129								•				•	
35.000 40.000 45.000 50.000	.1937	. 1785 . 2786													
51.600 57.000 60.900 65.000	, , , , ,	.2858 .1865 .0089				·	1						.2420		
68.000 69.000 79.300 95.500		0213			0240 0238		0101						.0166		
95.700 96.300 103.000 105.000 112.600	.3853	0267		·	.0408						•		.•		.0486
117.500 120.800 127.900 129.500					0101	0231		.2154	.0124			0186		.2158	•
130.000 135.000 139.600 144.000		0013			.0334		-	*E104	.0138 0200	.0128		0157 .1703			
155.000 180.000	0124 .1548	.0424			. 1851		•		•		•				

-.0124 6481. X/LB 1.0250 1.0500

PH1 .000 .1162 . 1585

DATE 20 APR	76		TABULATE	D SOURC	E DATA -	114								PAGE	270
				UPIA	IT 1059 (IH4) 01	ALONE	ORBITI	ER FUSEL	AGE		(RQ35	3CB)		
MACH (4)			LPHA (6)	= 20			. 16595		1) = 2.	4580	RN/L	= 3.010) CP	STG =	1.8033
							BLE CP/C			,					
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	. 1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000	.9264	.8553	.4955	.3654		.2973	.2632	.2328 .2265 .2207 .2005 .0741	•	.1809			.	.0268	
174.000	630 0				0707				0055	01:45		.0430	0710		.0932
180.000	.9264				.0393			.0208	.0257	.0415	.0345		.0710		
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.0290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	. 1574	.1401 .1360	. 1484	. 1523	. 1535		. 1570				.1095		.1002	.0904	
24.000 31.500 33.100	.1518 .1419	. 1331													
35.000 40.000 45.000	.1338 .1051	.1264							•				-		
50.000 51.600	.0399					•							0257		
57.000 60.900 65.000		0136 0022 0051													
68.000 69.000		0062											0252		
79.300 95.500 95.700		0068			0231 0170		0251		•	•					
95.300 103.000 105.000	.0256				0107			-					•		0281
112.600 117.500 120.800					0148				.0374			0170		0189	,
127.900 129.500						0117		.0215							
130.000 135.000		0237			0237				.0057	0144		0217			
139.600 144.000 155.000	.0107	069/			~.053/				0161			0207			
180.000		0147			0208										•

,

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

ORBITER FUSELAGE

(RQ3ECB)

PAGE 271

ALPHA (6) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

UPWT 1059 (IH4) 01 ALONE

X/LB

1.0250 1.0500

PHI .000 .0965

```
ORB. UPPER WING
                                                                                                        (RQ3UCB)
                                                                                                                   ( 15 APR 76 )
                                        UPWT 1059 (1H4) OI ALONE
              REFERENCE DATA
                                                                                                    PARAMETRIC DATA
SREF = 2690.0000 SQ.FT.

LREF = 1290.3000 INCHES

BREF = 1290.3000 INCHES
                                                                                                               BETA
                                                                                                                              .000
                            XMRP
                                          .0000 INCHES
                                                                                          RN/L
                                                                                                       3.000
                            YMRP
                                          .0000 INCHES
                            ZMRP
                                          .0000 INCHES
SCALE =
              .0100
                                                                                                                  CPSTG = 1.7063
MACH (1) =
                                                                                                      3.0000
               2.360
                         ALPHA ( 1) =
                                                 PINF
                                                                       Q(PSI) = 4.6698
                                                                                             RN/L
                                                        = 1.1978
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
AB/AR
            .4000
                    .6000
                             .8000
  X/CM
    .050
            .1032
                   -.0172
                             .0437
    .200
           -.0228
    .600
           -.0811
                  -.0989
    .800
                   -.0969
    .900
                    .1206
                           -.0897
    .950
                   -.0802
                                                                       Q(PSI) = 4.6698
                                                                                             RN/L = 3.0000
                                                                                                                  CPSTG = 1.7063
MACH ( 1) =
                2.360
                         ALPHA ( 2) =
                                          5.000
                                                 PINF = 1.1978
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
SANBM
            .4000
                     .6000
                             .8000
  X/CM
    .050
            .0582
    .200
           -.0643
                   -.0554
                          -.0022
    .600
           -.1119 -.1 60
    .800
                   -.1118
    .900
                    . 1233
                           -.1057
     .950
                   -.0960
                                                                                                    × 3.0000
                                                                                                                  CPSTG = 1.7063
MACH [ 11 =
                2.360 ALPHA (3) = 10.000 PINF = 1.1978
                                                                       Q(PS1) = 4.669B
                                                                                             RN/L
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CF/CPS
SA\BM
             .4000
                     .6000
                             .8000
  X/CH
     .050
           -.0267
     .200
           -.0863
                   -.0881 -.0433
    .600
           -.1237
                   -.1194
     .800
                    -.1205
                    . 1278
     .900
                           -.1180
     .950
                    -.1060
```

```
PAGE 273
DATE 20 APR 76
                           TABULATED SOURCE DATA - IH4
                                                                                                          (RQSUCB)
                                        UPWT 1059 (IH4) 01 ALONE
                                                                       ORB. UPPER WING
                                                                                                                    CPSTG = 1.7053
                                                                        Q(PSI) = 4.6698
                                                                                                     = 3.0000
                          ALPHA ( 4) =
                                         20.000 PINF
                                                                                              RN/L
 SECTION ( 1) ORB. UPPER MING
                                            DEPENDENT VARIABLE CP'CPS
2Y/8W
             .4000
                     .6000
                             .8000
  X/ÇW
    .050
           -.0851
                           -.1007
    .200
           -.1104 -.1278
    .600
           -.1310
                   -.1279
    .800
                   -.1289
    .900
.950
                    .1346
                           -.1175
                   -.1146
                                                                                                                    CPST6 = 1.7529
                                                                                                     3,0200
MACH (2) =
                2.950
                          ALPHA ( 1) =
                                                                        Q(PS1) = 4.0417
                                                                                              RN/L
                                            .000
                                                  PINF
                                                             .66350
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP. CPS
MBAAS
             .4000
                     .6000
                             .8000
  X/CW
    .050
            .1104
    .200
           -.0139
                             .0735
                     .0117
                   -.0618
-.0618
    .600
           -.0589
    .800
    .900
                     .0565
                           -.0433
    .950
                   -.0468
MACH ( 2) =
                2.950
                                                                        Q(PSI) = 4.0417
                                                                                                     = 3.0200
                                                                                                                    CPSTG = 1.7529
                          ALPHA (2) =
                                          5.000
                                                             .66350
 SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
SA\BM
             .4000
                     .6000
                             .8000
  X/CH
    .050
           .0660
-.0353
    .200
                   -.0158
                             .0291
           -.0702
                   -.0716
    .600
    .800
                   -.0701
.0585
                           -.0601
    .950
                   -.0617
```

OBJECTIVE PAGES IN

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PAGE 274
                         TABULATED SOURCE DATA - 1H4
                                                                                                (RQ3UCB).
                                    UPWT 1059 (IH4) 01 ALONE
                                                                 ORB. UPPER WING
                                                                                                         CPSTG = 1.7529
               2.950
                       ALPHA (3) = 10.000 PINF
                                                    = .66350
                                                                  Q(PS1) = 4.0417
                                                                                      RN/L = 3.0200
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SANBM
           .4000
                   .6000
                          .8000
  X/CW
    .050 -.0127
    .200
          -.0595 -.0490 -.0027
    .600
          -.0766 -.0746
    .800
                  -.0755
    .900
                   .0596
                         -.0685
    .950
                  -.0656
MACH (2) = 2.950
                                                                  Q(PSI) = 4.0417
                                                                                            = 3.0200
                       ALPHA ( 4) =
                                                                                      RN/L
                                              PINE
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SA\BM
         .4000
                   .6000 .8000
  X/CW
   .050
          -.0557
    .200
          -.0738 -.0740 -.0414
    .600
          -.0809 -.0801
    .800
                  -.0783
  .900
                  .0622 -.0703
    .950
                  -.0681
MACH (3) =
               3.700
                       ALPHA ( 1) = -10.000 PINF
                                                    = .32910
                                                                  Q(PS1) = 3.1538
                                                                                            × 3.8000
                                                                                                          CPSTG = 1.7839
 SECTION ( 1) ORB. UPPER WING
                                        DEPENDENT VARIABLE CP/CPS
SAVBM
            .4800
                   .6000
                          .8000
  X/CM
    .050
           .1345
    .200
           .0514
                  .0809
                          .1706
    .600
           -.0066
                 -.0085
    .800
                  -.0112
    .900
                   .0375
                           .0063
                   .0024
```

PAGE 275 CATE 20 APR 76 TABULATED SOURCE DATA - 1H4 - KN 3-(RQ3UCB) UPWT 1059 (1H4) 01 ALONE ORB. UPPER WING ∞ 3.0000 CPSTG = 1.7839MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32910 G(PS1) = 3.1539RN/L SECTION (1) ORB. UPPER HING DEPENDENT VARIABLE CP/CPS SANBM .4000 .6000 .8000 X/CM .050 .1338 .200 .0504 .1281 .0244 .600 -.0280 -.0255 .800 -.0254 .900 .0386 -.0071 .950 -.0193 CPSTG = 1.7839 MACH (3) =3.700 ALPHA (3) = Q(PS1) = 3.1538RN/L = 3.0000 .32910 SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM ,4000 .6000 .8000 X/CW .050 .1064 .200 .0032 .0278 .0874 .600 -.0362 -.0360 -.0358 .800 .0394 -.0284 .900 -.0205 .950 MACH (3) ≈ 3.700 ALPHA (4) = 5.000 **32910** Q(PSI) = 3.1539RN/L ≃ 3.0000 SECTION (1) ORB, UPPER WING DEPENDENT VARIABLE CP/CPS SA/BM .4000 .6000 .8000 X/CW .050 .0611 .200 .600 -.0249 -.0013 .0465 -.0444 -.0448 .600 -.0444 .900 .0399 -.0316 .950 -.0353

PINF

Q(PS1) = 2.4580

PAGE 276

CPSTG = 1.7839

CPSTG = 1.7839

CPSTG = 1.8033

= 3.0100

SECTION (1)ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

ALPHA(1) = -10.000

.4000 SA\BM .6000 .8000 X/CM .050 .1287 .200 .0528 .0836 . 1941 .600 -.0034 .0016 .800 .0018 .900 .950 .0403 .0283 .0043

-.0441 -.0371 -.0090

-.0461

-.0338

.0447 -.0353

-.0479 -.0460

4.600

.200

.600

.800

.900

.950

MACH (4) =

DATE 20 APR 76 TABULATED	SOURCE DATA - 1H4	PAGE 277
	UPWT 1059 (IH4) 01 ALONE ORB, UPPER WING	(33UCB)
MACH (4) = 4.600 ALPHA (2)	= -5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0	0100 CPSTG = 1.8033
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS	
0008. 0008. WB\YS		
X/CH .050 .1187 .200 .0255 .0608 .1486 .60002010144 .8000187 .900 .0366 .0061 .9500099		
MACH (4) = 4.600 ALPHA (3)	= .000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0	0100 CPSTG = 1.8033
SECTION (110RB. UPPER WING	DEPENDENT VARIABLE CP/CPS	
0008. 0008. 0004. NB\YS		
X/CW .050 .0934 .200 .0044 .0277 .0877 .60002240165 .8000165 .900 .0376 .0016 .9500078		
MACH (4) = 4.600 ALPHA (4)	= 5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0	0100 CPSTG = 1.8033
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS	•
0008. 0008. 0004. WB\YS		
X/CH .050 .0579 .2000128 .0089 .0548 .60002720251 .8000247 .900 .03800099 .9500134		

)

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PAGE 278
DATE 20 APR 76
                           TABULATED SOURCE DATA - 1H4
                                                                                                          (RQ3UCB)
                                        UPHT 1059 (IH4) O1 ALONE
                                                                       ORB. UPPER WING
                                                                                                                    CPSTG = 1.8033
                                                                                                        3.0100
MACH ( 4) =
               4.600
                         ALPHA (5) = 10.000 PINF = .16595
                                                                        Q(PSI) = 2.4580
                                                                                              RN/L
SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
SYYEM
            .4000
                    .6000
                             .8000
 X/CM
    . 050
            .0418
.0411
    .200
                    .0408
                             .0405
   .600
            .0411
                    .0411
   .800
.900
.950
                    .0408
.0415
                             .0405
                     .0411
                                                                                                        3.0100
                                                                                                                    CPSTG = 1.8033
                                                                        Q(PSI) = 2.4580
                                                                                              RN/L
MACH [ 4] =
              4.600
                         ALPHA ( 6) =
                                         20.000
                                                            . 16595
SECTION ( 1) ORB. UPPER WING
                                            DEPENDENT VARIABLE CP/CPS
SAVBM
            .4000
                    .6000
                            .8000
 X/CW
    .050
           -.0170
           -.0244 -.0161
-.0255 -.0253
-.0240
    .200
                             .0002
   .600
    .900
.950
                    .0422 -.0121
```

-.0136

UPWT 1059 (IH4) 01 ALONE

.0000 INCHES

.0000 INCHES

TABULATED SOURCE DATA - IH4

 (\cdot)

PAGE 279

.000

(15 APR 76)

(RQ3LCB)

PARAMETRIC DATA

3.000

BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 MACH (1) = = 1.7063 2.360 ALPHA (1) = .000 PINE = . 1.1978 Q(PS1) = 4.6698RN/L **3.0000** CPSTG SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS MB/AR .3011 .3480 .5000 .6000 .7500 .8500 .9500 .9980 X/CM .000 -.0471 .3114 .3530 .001 .2037 .0038 .0068 .0363 .0374 .3202 .002 .0005 .0291 .003 .4286 .3763 .004 .0897 .0845 .005 .0139 .0269 .025 .0330 .0194 .0406 .045 .0354 .100 .0064 .0327 .0379 .153 -.0027 :177 -.0044 .200 -.0077 .299 .0018 .302 .0033 .0300 .428 .0186 .444 .0065 .487 .0228 .559 .0227 .600 .0134 .700 -.0085 .736 .0152 .800 .850 -.0286 -.0417 .900 -.0492 -.0542 -.0529 -.05153,0000 2,360 ALPHA (2) = 5.000 PINF = 1.1978Q(PSI) = 4.8698RN/L CPSTG = 1.7063 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CF/CPS SA/6M .3011 .3480 .4000 .6000 .7500 .B500 .9500 .9980 X/CM .000 .3940 -.0939 .3694 100. .0304 10291 .2978 . 1291 .1216 .3827 .0865 .4097 .002 .1130 .003 .3349 .1765

.1117

.1933

.1039

ORB. LOWER WING

RN/L

DATE 20 ATR 76

.004

.005

REFERENCE DATA

YMRP

2690.0000 SQ.FT. 1290.3000 INCHES

.350 ALPHA (2: LOWER WING .3011 .3480		NT VARIABL 6000	E CP'CPS .7500	.8500 .950	00 .998 0	(RQ3LCB)	
LOWER WING	DEPENDE .4000 .5000 .1096 .1196 .1123 .0700 .0479	.6000	.7509 .128:	.8500 .950				
	.4000 .5000 .1096 .1196 .1123 .0700 .0479	.6000	.7509 .128:	.8500 .950				
.3011 .3480	.1096 .1196 .1123 .0700 .0479	.0832	.128;					
	.0700 .0479 .0540	.0832		.1202 .117	77			
	.0708 0195	.0718 .0414 .0131 0051 0226 -	.011:	01	43			
.360 ALPHA (3:) = 10.000 F		. 1978	Q(PS1) =	4.6698	RN/L = 3.	0000 CPSTG	= 1.7063
LOWER WING	DEPENDE	NT VARIABL	E CP.CPS					
.3011 .3480	.4000 .5000	.6000	.7500	.8500 .95	.9980			
.02630084	.3494 .1419 .2147 .1528 .1471 .1013 .1058	.4561 .2344 .1739 .3470 .3044 .2073 .1762	.2275	.3680 .2423 .251 .2448 .2870 .2298	1157 02			
	.3011 .3480	.3011 .3480 .4000 .5000 .02630084 .3494 .1419 .2147 .1528 .1471 .1013 .1058	.3011 .3480 .4000 .5000 .5000 .02630084 .3494 .2344	.3011 .3480 .4000 .5000 .6000 .7500 .02630084 .3494 .2344 .4304 .1739 .3470 .3044 .2073 .2275 .1528 .1762 .1471 .1013 .1058 .1506 .1506	.3011 .3480 .4000 .5000 .6000 .7500 .8500 .95 .02630084 .3494 .4561 .3680 .2423 .1739 .2251 .3470 .2448 .3044 .2870 .2998 .1419 .2147 .2275 .1528 .1762 .2391 .20 .1419 .1013 .1058 .1506 .1506	.3011 .3480 .4000 .5000 .6000 .7500 .9500 .9500 .9980 .02630084 .3494 .4561 .4304 .2423 .2251 .2448 .36470 .2448 .2870 .2278 .2298 .1419 .2147 .1528 .1762 .2391 .2002 .1013 .1058 .1506	.3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 .02630084 .3494 .4304 .2423 .2423 .2423 .2423 .2448 .2870 .2448 .2870 .2298 .2298 .1419 .2147 .1528 .1762 .2391 .2002 .1419 .1013 .1058 .1506	.3011 .3480 .4000 .5000 .5000 .7500 .9500 .9500 .9980 .02630084 .3494 .4304 .2423 .2251 .2251 .2276 .3470 .2448 .2870 .2298 .1528 .1762 .2275 .1528 .1762 .2391 .2002 .1419 .1013 .1058 .1506 .2005 .1506

DATE 20 APR 76 PAGE 281 TABULATED SOURCE DATA - 1H4 UPWT 1059 (1H4) O1 ALONE ORB. LOWER WING (RQ3LCB) MACH (1) = 2.360 ALPHA (3) = 10.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 X/CW. .700 .0986 .736 .0941 .0622 .0396 .0167 .800 .850 .900 .0180 .0262 .0360 MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = 1.1978 Q(PS1) = 4.6698SECTION (I) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SAVBM .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CW .4824 .4046 .3427 .2255 .4738 .3705 .2919 .4721 -.1170 .000 .001 .0489 -.0020 .3504 .4809 .002 .4332 .1041 .003 .004 .005 4449 .025 .1935 .3207 .4411 .045 .2243 .100 .3543 .2777 .4394 .1538 . 153 .177 .2852 .2142 .202 .1639 .2271 .3792 .428 .3157 .444 .1761 .487 .559 .600 .3083 **S885.**

.2952 .2361

.1840 .1537

.1164

.1468

.1243

.1223

.736

.800 .850 .900

DATE ED AFF	7.0	•	INDULATE	ישאמטכ ט.	E DAIN -	1117								•		
				UPW	T 1059 (IH4) OI	ALO NE	ORB. L	OWER WII	NG			(RQ3LCB)			
MACH (2)	= 2.9	950 AL	PHA (I)	=	.000 P	inf =	.63350	Q(PSI) = 4.6	0417	RN/L	*	3.0200	CPSTG	=	1.7529
SECTION (1) ORB. (LOWER WIN	IG		DEPENDE	NT VARIA	BLE CP/C	PS								
SA\BM	.2500	.3011	.3480	.4000	.5900	.6000	.7500	.8500	.9500	.9980						
X/CW 000						.3272	•	,3777		0147						
.001 .002 .003 .004		.0068	.0075		.2412	.0683 .0255 .4535 .1120	.3310	.0626 .0471 .4107 .1167		-,0147				٠.		
.005 .025 .045				.0326	.0366	.0395	.0640	.0476					•			
. 100 . 153	.0019			.0333		.0239		.0550	.0859							
. 177 . 200				0063	.0001											
.299 .202	.0004			.0004		0170	.0382									
.428 .444 .487	.0045				.0153	.0170										
.559 .600 .700 .736	.0126			.0140		.0081 0072				•						
.800 .850 .900	.0160			0333		0207 0295 - 0372	0351		0266							•
MACH (2)	= 2.9	950 AL	PHA (2)	= 5	q 000.	inf =	.66350	Q(PS1	() = 4.	0417	RN/L	*	3.0200	CPSTG	*	1.7529
SECTION (1)ORB.	LOWER WIN	IG		DEPENDE	NT VARIA	BLE CP/C	PS								
SANEM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .002 .003 .004		.0253	.0234		.3145	.4015 .1572 .1071 .4254 .2039	.3921	.3909 .1406 .1207 .3659 .1869		0523						
.005 .025 .045				.1159 .1168	. 1434	.1278	.1447	. 1234					٠			
.100 .153 .177 .200 .299	.0333			.0505	.0694	.0895		.1381	.1359							

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DATE 20 APR 76
                                                                                                                                      PAGE 283
                              TABULATED SOURCE DATA - 1H4
                                                                                                                     (ROSLCB)
                                            UPWT 1059 (IH4) O1 ALONE
                                                                               ORB. LOWER WING
MACH ( 2) =
                  2.950
                             ALPHA ( 2) =
                                              5.000
 SECTION ( 1) ORB. LOWER WING
                                                 DEPENDENT VARIABLE CP/CPS
24/8M
              .2500
                       .3011
                                .3480
                                          .4000
                                                  .5000
                                                            .6000
                                                                     .7500
                                                                              .8500
                                                                                        .9500
                                                                                                 .9980
  X/CW
                                                                     .1368
     .302
                                          .0520
     .428
                                                            .0850
     444
              .0348
     .487
                                                   .0762
     .559
.600
                                          .0656
                                                            .0723
     .700
.736
.800
                                                            .0406
              .0492
                                                            .0179
     .850
                                                            .0038
     .900
                                        -.0096
                                                          -.0093
                                                                     .0012
                                                                                        .0063
MACH ( 2) =
                  2.950
                                                                    .66350
                                                                                Q(PSI) = 4.0417
                                                                                                        RN/L
                                                                                                               = 3.0200
                                                                                                                                 CPSTG
                                                                                                                                       = 1.7529
                             ALPHA ( 3) = 10.000
                                                        PINF
 SECTION ( 1) ORB. LOWER WING
                                                 DEPENDENT VARIABLE CP/CPS
SA/BM
              .2500
                       .3011
                                                            .6000
                                                                     .7500
                                                                              .8500
                                                                                                 .9980
                                .3480
                                          .4000
                                                   .5000
                                                                                        .9500
  X/CM
     .000
                                                            .4714
                                                                               .3999
                                                                                               -.0650
                                                           .2308
.1720
.3847
                                                                              .2319 .2112 .2958
     .001
                       .0306
                                 .0074
                                                   .3734
                                                                     .4531
     .002
     .003
     .004
                                                            .3048
                                                                              .2884
                                                                              .2167
                                                            . 1994
     .025
                                          .1333
                                                   .2111
                                                                     .2231
     .045
                                          .1419
                                                            .1632
                                                                               .2225
                                                                                        .1942
     . 153
              .0618
     .177
                                                   .1301
                                         .0918
     .299
              .0618
                                          .0957
                                                                     .1642
     .428
                                                            .1502
     ,444
              .0672
     .487
                                                   .1366
     .559
                                          .1090
     .600
.700
.736
.800
.850
                                                            . 1291
                                                            .0956
              .0829
                                                            .0642
                                                            .0446
```

.0157

.0259

.0453

	•													-		
				UPW	IT 1059 (10 (#H1	ALONE	ORB.	LOWER Hi	NG			(RQ3LCB)			
MACH (2)	= 2	.950 A	LPHA (4) = 50	.000 P	INF =	.66350	Q(PS	I) = 4.	0417	RN/L	2	3.0200	CPSTG	=	1.7529
SECTION (DORB.	LOWER WI	NG		DEPENDE	NT VARIA	ABLE Cald	:PS								
SA/BM	.2500	.3011	.3480	.4000	,5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000		٠				EE01		2000		0070						
.001 .002 .003 .004		.0610	.0232	•	.4104	.5591 .4003 .3226 .3151 .4896	.5395	.3826 .4755 .4296 .1750 .5099 .4436		0636						
.025 .045				. 1975 .2235	.3272	.3010	.4358	. 4730								
.100 .153	. 1464					.3502		.4340	.2981							
.177 .200				.2084	.2726											•
.299 .302 .428	1607			.2173		.3100	.3696									
.444 .487	.1721				,2900	.5100										
.559 .600 .700	.1982			.2389		.2839										
.736 .800 .850 .900	.1585			.1178		.1799 .1513 .1204	. 1523		.1382							
MACH (3)	* 7	.700 A	LPHA (1		000 0		.1963	0/00	.1306	1670	RN/L	_	3.0000	COSTS	_	1.7839
SECTION (,to			-		11 - 5.	1000	MM/ L	-	5,0000	resio	-	1.7635
				trans			ABLE CP/C									
X/CM	.2300	.3011	.3480	.4000		.6000	. /500	.8500	.9500	.9980				•		٠.
.000 .001 .002 .003		~.0467	0470		.1114	.2188 .0024 0195 .4274	.2357	.3240 0007 0093 .4942		0305			,			
.004 .005 .025 .045	٠.			0446 0455	0207	.0464 0115	00L8	.0191 0079								
.100 .153 .177	0415				0424	0168		0109	0043							
.200 ees.	0426			0424	*****											

. .

X/CW .000 .2882 .3771 -.0038 -.0379 . 1594 .0249 .2882 .0321 .001 -.0362 -.0038 .0124 .002 .4927 .0602 .0176 .003 .4578 .004 .0737 .0078 .005 -.0356 -.0356 .025 -.0038 .0203 .045 .100 -.0022 .0159 . 0269 .153 -.0281 -.0353 .200 .299 .302 -.0352 -.0298 -.0355 .0019 .428 -.0207 .444 -.0301 -.0305 -.0303 .559 .600 .700 -.0295 -.0376 .736 .800 .850 -.0200 -.0425 -.0441

PAGE

 (\cdot)

ORB. LOWER WING

-.0379

.9500

.9980

(RQ3LCB)

SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CF/CPS .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980

.6000

UPWT 1059 (1H4) 01 ALONE

-.0424 .428 -.0438 . կկկ -.0424 .487 ,559 -.0439 .600 -.0436 .700 -.0450 .736 -.0438.800 -.0478 .850 -.0469 -.0458 .900 -.0455 -.0442

.4000

TABULATED SOURCE DATA - 1M4

ALPHA (1) = -10.000

DATE 20 APR 76

MACH (3) =

SA/BM

SA/BM

X/CW .302 3.700

.3011

.2500

MACH (3) = 3.700 3.0000 ALPHA (2) = PINF .32913 Q(PS1) = 3.1538RN/L

.7503

.8500

-.0190

SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS

.3480

.900 -.0422 -.0409 -.0404

-.0277

DATE GU API	K /6		IABULA	נט שטטאני	E DATA -	1 H4								•	MOC	E00
				UPW	T 1059 (IH4) OI .	ALONE	ORB. L	OWER WII	VG			(RQ3LCB)			
MACH (3)	= 3.70	10 . AL	PHA (3)) =	.000 P	INF =	.32910	Q(PS)) = 3.	1538	RN/L	=	3.0000	CPSTG	=	1.7839
SECTION (DORB. LO	WER WIN	G		DEPENDE	NT VARIA	BLE CP/CF	rs							•	
SANBM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CH .000 .001 .002 .003 .004 .005		.0006	.0017	.0229	.2393	.3174 .0666 .0295 .4422 .1214 .0431	.343¢	.3997 .0802 .0554 .4422 .1207 .0596		.0005						
.100 .153 .177 .200 .299 .302	0023			0065 0033	.0027	.0288	.0384	.0565	.0669				-•			
.428 .444 .487 .559 .500 .700	0007			.0006	.0010	.0072										
.800 .850 .900 MACH (3)		ID ALL	PHA (4)	0275	.00G P	0174 0243 0288	0244	o (Pe)	0155	1670	RN/L	`	3.0000	CDSTR		1.7839
SECTION (, - ,			BLE CP/CF		, - 3.	1030	11147	_	3.0000	01510		,,,,,,,
SA\OM	.2500	.3011	.3480	.4000	.5000	.6000		.8500	.9500	.9980.						
X/CH .000 .001 .002 .003 .004		.0215	.0201		.3207	.4060 .1399 .0882 .4390 .2018	.4081	.4187 .1394 .1112 .3923 .2082		0272						
.025 .045 .100 .153 .177 .200	.0247			.0845 .0847	. 1222	.0836	.1253	.1178	.1178							
.635	,010,		•													

ON POOR "	
O	
	\$ TO

SECTION (1) ORB. LOHER MING DEPENDENT VARIABLE CP/OPS 2/98			* -		UPW	T ,1059 ((HH) 01	ALONE	ORB. 1	LOWER WI	NG			(RQ3LCB)			
X/CH	MACH (3)	= 3.	700 AL	LPHA (4)	়≖ 5	.000											
X/CW	SECTION (1)ORB. (LOWER WII	NG		DEPENDE	NT VARIA	BLE CP/C	PS								
. 302 .0345 .0693 .0598 .444 .0189 .0581 .0581 .0559 .0437 .0539 .0329 .0329 .0329 .0329 .0329 .0033 .0033 .0033 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0043 .0044	SA/BM	.2500	.3011	.3480	.4000	.5000	.6900	.7500	.8500	.9500	.9980				•		
.555	.302 .428 .444	.0189		•		, CEO;	.0643	.0908			•						
.850	.559 .600 .700	.0265			.0437	.0301											
SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS 2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9990 X/CH .000 .001 .0317 .0157 .3955 .2350 .4803 .2250 .002 .002 .003 .003 .2983 .3003 .2000 .2983 .3003 .005 .005 .025 .025 .1238 .1322 .2149 .1927 .2299 .045 .050 .050 .0589 .1322 .1126 .1531 .2153 .1793 .177 .200 .299 .0548 .0800 .3000 .1281 .1321 .1321 .1321 .1321 .1321 .1321 .1321 .1321 .1321 .1321 .1331 .2331	.800 .850				-,0077		.0043	.0051		.0125					·		
X/CH	fach (3)	= 3.	700 AL	_PHA (5)	¤ 10	.000 P	INF =	.32910	Q(PS	[) = 3.	1539	RN/L	=	3.0000	CPSTG	*	1.78
X/CH .000 .001 .001 .001 .002 .002 .003 .004 .005 .005 .005 .005 .006 .007 .007 .008 .009 .009 .009 .009 .009 .009 .009	SECTION (1)ORB. (LOWER WIL	NG.		DEDENDER											
.000				10		DEPENDE	NI VARIA	BLE CP/(1	75								
.025	54\RM	.2500	.3011		.4000	-	-			.9500	.9980						
.100 .153 .0569 .177 .1126 .200 .0780 .299 .0548 .302 .0800 .1656 .428 .1321 .444 .0572 .487 .1166 .559 .0895 .600 .0816	X/CH .000 .001 .002 .003 .004	.2500		.3480	.4000	.5000	.6000 .4998 .2360 .1724 .4270	.7500	.9500 .9348 .2260 .1923 .3290	.9500							
.200 .0760 .299 .0548 .302 .0800 .1656 .428 .1321 .444 .0572 .487 .1166 .559 .0895 .600 .1136 .700 .0816	X/CH .000 .001 .002 .003 .004 .005	.2500		.3480	. 1238	.3955	.6000 .4998 .2360 .1724 .4270	.7500 .4803	.9500 .9348 .2260 .1923 .3290	.9500							
.428 .1321 .444 .0572 .1166 .487 .1166 .559 .0895 .600 .1130 .700 .0816	X/CH .000 .001 .002 .003 .004 .005 .025 .045 .100 .153			.3480	. 123B . 1322	.5000	.6000 .4998 .2360 .1724 .4270 .2983 .1977	.7500 .4803	.8500 .4348 .2260 .1923 .3290 .3003 .2000				•				
.487 .1166 .559 .0895 .600 .1136 .700 .0816	X/CH .000 .001 .002 .003 .004 .005 .025 .045 .100 .153 .177	.0589		.3480	. 123B . 1322	.5000	.6000 .4998 .2360 .1724 .4270 .2983 .1977	.7500 .4803	.8500 .4348 .2260 .1923 .3290 .3003 .2000								
.700 .0816	X/CH .000 .001 .002 .003 .004 .005 .025 .100 .153 .177 .200 .299 .302	.0589		.3480	.1238	.5000	.6000 .4998 .2360 .1724 .4270 .2983 .1977	.7500 .4803	.8500 .4348 .2260 .1923 .3290 .3003 .2000				•				
.880 .0551 .850 .0395	X/CH .000 .001 .002 .003 .004 .005 .025 .100 .153 .177 .200 .299 .302 .428 .444 .487	.0589		.3480	.1238 .1322 .0780	.5000 .3965 .2149	.6000 .4998 .2360 .1724 .4270 .2983 .1977	.7500 .4803	.8500 .4348 .2260 .1923 .3290 .3003 .2000								•

				UPW	T 1059 ((184) 01	ALONE	ORB. (OWER WING			(RQ3LCB)			٠
MACH (3)	= 3.	700 ALF	PHA (6)	= 20	.000 F	INF =	.32910	Q(PS)	() = 3.15	38 RI	N/L 4	= 3.0000	CPSTG	22	1.7839
SECTION (DORB.	LOWER WING	;		DEPENDE	ENT VARIA	BLE CP/CF	PS							
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
X/CW															
.000 .001 .002 .003 .004 .005		.0686	.0399		.4867	.6404 .4250 .3323 .3971 .5218 .3819	.6195	.3413 .4073 .3711 .1851 .4558 .3840	- .	.0324					
.025				.2095	.3495		.4555	,,,,,,,							
.045 .100 .153	. 1439			.2324		.3378		.3880	.2778						
.177 .200				.1981	.2597										
.209 .302 .428	. 1534			.2051		. 3098	.3401								
. 444	. 1639				OHOO	10000									
.487 .559 .600 .700				.2229	.2760	.2766 .2221									
.800 .850 .900	.1849			.1105		.1738 .1450 .1169	.1310		.1319		٠				
MACH (4)	= ij	600 ALF	PHA (1)	= -10	.000 F	PINF =	.16595	QIPS	() = 2.45i	80 R	N/L :	= 3.0 100	CPSTG	=	1.8033
SECTION (DORB.	LOWER WING	;		DEPENDE	ENT VARIA	BLE CP/C	FS							
SA\BM	.2590	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
WOVX .000 .001 .002 .003 .004		~.0213 -	0228		.1398	.2292 .0228 .0009 .4458	.2657	.3835 .0182 .0039 .5709	-	.0088					
.005 .025 .045				020t 0213	.0017	.0085	.0171	.0066						٠	
.100 .153 .177	0186				-,0237	.0009		.0085	.0171						
.200 200	0250			0266											٠

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PAGE 28S
                         TABULATED SOURCE DATA - IH4
DATE 20 APR 76
                                       UPWT 1059 (IH4) OI ALONE
                                                                      ORB. LOWER WING
                                                                                                        (RQ3LCB)
                4.600
                         ALPHA ( 1) = -10.000
SECTION ( 1) ORB. LOWER WING
                                           DEPENDENT VARIABLE CP/CPS
SA/BM
            .2500
                                                                                      .9980
                    .3011
                            .3480
                                    .4000
                                            .5000
                                                     .6000
                                                             .7500
                                                                      .8500
                                                                              .9500
 X/CM
                                                           -.0069
    .302
                                   -.0259
                                                    -.0171
    .428
    ,444
           -.0253
    .487
                                           -.0241
    .559
                                    -.0245
    .600
                                                    -.0210
    .700
                                                    -.0223
    .736
           -.0243
    .800
                                                    -.0231
    .850
                                                    -.0242
    .900
                                    -.0252
                                                    -.0250
                                                            -.0830
                                                                            -.0180
MACH (4) =
                4.600
                         ALPHA ( 2) = -5.000
                                                 PINF = .16595
                                                                       Q(PSI) = 2.4580
                                                                                             RMZL
                                                                                                  × 3.0100
                                                                                                                   CPSTG ≈ 1.8033
 SECTION ( 1) ORB. LOWER WING
                                           DEPENDENT VARIABLE CP/CPS
54/8M
                    .3011
                             .3480
                                    .4000
                                            .5000
                                                     .6000
                                                             .7500
                                                                      .8500
                                                                              .9500
                                                                                      .9980
 X/CW
    .000
                                                     .2919
                                                                      .4483
                                                                                      .0070
    .00t
                   -.0187 -.0216
                                             .1746
                                                     .0354
                                                             .3+35
                                                                      .0557
    .002
                                                                      .0313
                                                     .0114
    .003
                                                     .4977
                                                                      .5863
    .004
                                                                      .0904
                                                     .0894
    .005
                                                     .0221
                                                                      .0379
    .025
                                    -.0172
                                             .0166
                                                             .0+12
    .045
                                    -.0183
    .100
                                                     .0135
                                                                      .0361
                                                                              .0452
    . 153
           -.0147
                                            -.0178
    .177
    .200
                                    -,0215
    .299
           -.0181
    .302
                                    -.0203
                                                             .0109
    .428
                                                    -.0072
    ,444
           -.0192
                                            -.0182
    .487
    .559
                                    -.0194
    .600
                                                    -.0145
    .700
                                                    -.0203
    .736
           -.0197
    .800
                                                    -.0236
    .850
                                                    -.0251
    .900
                                    -.0249
                                                    -.0253 -.0 28
                                                                             -.0163
```

	,		1110001110		G DAIN	****								•		
				UPN	IT 1059 (IH4) 01	ALONE	ORB. L	OWER WII	NG			(RQ3LCB)			
MACH (4)	= 4.I	500 AL	.PHA (3)	=	.000 P	INF =	. 185 95	Q(PS)) = 2.	+580	RN/L	=	3.0100	CPSTG	=	1.8033
SECTION (1)ORB. (LOWER WIN	1G		DEPENDE	NT VARIA	BLE (P/C	PS					,			
54/BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						•
X/CW .000 .001 .002 .003 .004 .005	·	.0042	.0045	.0281	.2573	.3509 .0804 .0402 .4695 .1427	.3652	.4510 .1018 .0694 .4992 .1499		.0067						
.045 .100 .153 .177 .200	.0012			0013	.0089	.0397		. 0737	.0752							
.299 .302 .428 .444 .487	.0001			.0000	.0115	.0210	.0450									
.559 .600 .700 .736 .800 .850	.0002			.0040	.0113	.0120 0022 0116 0159 0184	01+0		0048		-					
MACH (4)			.PHA (4)	# 5		INF =	.16595 BLE C ^o /C) = 2.º	+580	RN/L	*	3.0100	CPSTG	=	1.8033
SAVEM	.2500	.3011	.3480	.4000	.5000	.6000	.7530	.8500	0500	.9980						
X/CW .000 .001 .002 .003 .004	.2500	.0221	.0199	.4000	.3465	.4401 .1438 .0920 .4755 .2169	.4570	.4570 .1621 .1211 .4254 .2073	.5500	0095		-			•	
.025 .025 .100 .153 .177 .200	.0262			.0809 .0809	. 1269 . 0522	.0872	. 1453	.1151	.1100			٠.				

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PAGE 291
DATE 20 APR 76
                               TABULATED SOURCE DATA - IH4
                                                                                                                         (RQ3LCB)
                                                                                 ORB. LOWER WING
                                              UPWT 1059 (1H4) 01 ALONE
MACH (4) =
                  4.600
                             ALPHA ( 4) =
                                                5.000
                                                  DEPENDENT VARIABLE CP/CPS
 SECTION ( 1) ORB. LOWER WING
                                                                                                    .9980
SA/BM
              .2500
                        .3011
                                 .3480
                                           .4000
                                                    .5000
                                                              .6000
                                                                       .7500
                                                                                 .8500
                                                                                           .9500
  X/CW
                                                                       .0915
     .302
                                           .0324
    .428
                                                              .0653
    .444
              .0203
                                                    .0544
     .559
                                           .0396
                                                              .0529
.0337
     .600
     .700
.736
.800
              .0230
                                                              .0179
     ,850
                                                              .0081
     .900
                                         -.0063
                                                                                           .0154
                                                              .0002
                                                                       .0096
                                                                                                                                                 1.8033
MACH (4) =
                                               10.000
                                                                      .16595
                                                                                   Q(PSI) = 2.4580
                   4.600
                             ALPHA ( 5) =
                                                          PINF
                                                   DEPENDENT VARIABLE CF/CPS
 SECTION ( 1) ORB. LOWER WING
                                                                                           .9500
                                                                                                    .9980
2Y/BW
                                                                       .7500
                                                                                 .8500
                        .3011
                                  .3480
                                           .4000
                                                    .5000
                                                              .6000
  X/CW
                                                              .0421
.0415
     .000
                                                                                 .0410
                                                                                                    .0410
     .001
                                                                       .0410
                                                                                 .0410
                                 .0406
                                                    .0411
                        .0410
     .002
                                                              .0411
                                                                                 .0410
                                                                                 .0410
     .003
                                                              .0408
.0408
     .005
                                                              .0410
                                                                                 .0406
                                                    .0413
     .025
.045
.100
.153
.177
.299
.428
.444
.487
.559
.600
.700
.730
.850
                                           .0434
                                                                       .0410
                                           .0414
                                                              .0455
                                                                                 .0410
                                                                                           .0410
               #Q#Q.
                                                     .0410
                                           .0411
               .0406
                                           .0410
                                                                        .0410
                                                              .0415
               .0426
                                                     .0413
                                           .0409
                                                              .0411
                                                              .0415
               .0413
                                                              .0408
                                                              .0415
                                                                        .0410
                                                                                           .0413
                                           .0444
                                                              .0408
```

DATE 20 APR	₹ 76		TABULATE	D SOURCE	DATA -	IH4								F	AGE	292
				UPWI	T 1059 ()	(H4) Oİ	ALONE	ORB. L	OWER WI	NG			(RQ3LCB)			•
MACH (4)	= 4,	600 AL	.PHA (6)	× 20.	000 PI	INF =	.16595	Q(PS)) = 2.	4580	RN/L	=	3.0100	CPSTG	=	1.8033
SECTION (1)ORB.	LOWER WIN	1G		DEPENDEN	IT VARIA	BLE CP 'CF	PS								
SA\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .002 .003 .004 .005		.0767	.0520	.2309 .2492	.5799	.7340 .4819 .3820 .4785 .5728 .4322	. 4876 . 3970	.3550 .4109 .3660 .1639 .4747	•	0098						
.100 .153 .177 .200	.1474			.2045	.2646	.3498		.3805	.2830							
.299 .302 .428 .444 .487	. 1571			.2103	.2753	.3240	.3189									
.559 .600 .700 .736 .800 .850	. 1845			.2248		.2745 .2144 .1636 .1338										
.900				.1063		.1074	. 122!		.1374							

 $\frac{f^{(n)}(x)}{\sqrt{2n}} X$

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PAGE 293
DATE 20 APR 76
                          TABULATED SOURCE DATA - IH4
                                                                                                             ( 15 APR 76 )
                                      UPWT 1059 (1H4) 01 ALONE
                                                                   ORB. VERT. TAIL
                                                                                                    (RQ3VCB)
                                                                                                PARAMETRIC DATA
             REFERENCE DATA
                                                                                                                         .000
SREF = 2690.0000 SQ.FT.
                                        .0000 INCHES
                                                                                      RN/L
                                                                                                   3.000
                                                                                                          BETA
                           XMRP =
LREF = 1290.3000 INCHES
                           YMRP
                                        .0000 INCHES
BREF = 1290.3000 INCHES
                           ZMRP
                                        .0000 INCHES
SCALE =
             .0100
                                                                                                = 3.0000
                                                                                                              CPSTG = 1.7063
                                                                    Q(PSI) = 4.6698
                                                                                         RN/L
MACH (1) = 2.360
                        ALPHA ( 1) =
                                         .000
                                               PINF
                                                      = 1.1978
 SECTION ( 110RB, VERT. TAIL
                                          DEPENDENT VARIABLE CP/OPS
Z/BV
            .2990
                   .5320
                           .7650
                                   .9050
  X/CV
    .000
            .4097
                    .3797
                           .2956
                                   .3855
    .300
            .1370
                   .1315
                           .1187
    .500
                   .1029
    .700
                  -.0415
    .900
          -.0619 -.0526 -.0361
                                                                                                              CPSTG = 1.7063
                                                                                               = 3.0000
MACH ( 1) = 2.360
                        ALPHA ( 2) =
                                        5.000 PINF
                                                      = 1.1978
                                                                     Q(PSI) = 4.6698
                                                                                         RN/L
                                          DEPENDENT VARIABLE CP/CPS
 SECTION ( 1)ORB. VERT. TAIL
Z/BV
            .2990
                    .5320
                           .7650
                                   .9050
  X/CV
    .000
            .3512
                    .3381
                            .2462
                                   .3023
    .300
            . t 045
                   .1008
                           .0928
    .500
                   .0744
    .700
                   -.0545
           -.0719 -.0647 -.0485
    .900
                                                                                               = 3.0000
                                                                                                              CPSTG = 1.7063
                                                                     Q(PS1) = 4.6698
                                                                                         RN/L
MACH (1) = 2.360
                        ALPHA(3) = 10.000 PINF = 1.1978
 SECTION ( 1) ORB. VERT. TAIL
                                          DEPENDENT VARIABLE CP/CPS
Z/BV
            .2990
                                    .9050
                    .5320
                            .7650
  X/CV
    .000
            .3258
                    .2783
                            . 1904
                                    .2442
    .300
            .0852
                    .0761
                            .0676
    .500
                    .0517
    .700
                   -.0631
```

.900

-.0804

-.0729

-.0589

.

DATE 20 APR 76	TABULATED SOL	RCE DATA - IH4			PAGE 294
	ι	PWT 1059 (!H4) 01 ALONE	ORB. VERT. TAIL	(RQ3VCB)	
MACH (1) = 2.	360 ALTHA (4) #	20.000 PINF = 1.1978	Q(PSI) = 4.6698	RN/L = 3.0000	CPSTG = 1.7063
SECTION (1)ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990	.5320 .7650 .905	0			
X/CV .800 .4083 .300 .0688 .500 .700 .9001074	.2533 .1155 .150 .0474 .0322 .0354 0817 09420752	O .			
MACH (2) = 2.	950 ALPHA (1) =	.000 PINF = .66350	Q(PSI) = 4.0417	RN/L = 3.0200	CPSTG = 1.7529
SECTION (1)ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS		•	
Z/BV .2990	.5320 .7650 .905	q			
X/CV .000 .3948 .300 .137! .500 .700 .900 ~.0334	.3703 .2983 .386 .0795 .0429 .1001 0045 01750121	6			
MACH (2) = 2.	950 ALPHA (2) =	5.000 PINF = .66350	Q(PSI) = 4.0417	RN/L = 3.0200	CPSTG = 1.7529
SECTION (1)ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS		•	
Z/8V .2990	.5320 .7650 .905	0	·		
X/CV .000 .3454 .300 .1031 .500 .700 .9000419	.3280 .2350 .304 .0746 .0441 .0806 0194 03120195	2			
MACH (2) = 2.	950 ALPHA (3) =	10.000 PINF = .66350	Q(PSI) = 4.0417	RN/L = 3.0200	CPSTG = 1.7529
SECTION (1) ORB.	VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/8V .2990	.5320 .7650 .905	0 .	· .		
X/CV .000 .3064 .300 .0836 .500 .700 .900 ~.0502	.2609 .2002 .249 .0590 .0385 .0590 0292 03930280	6			

DATE 20 APR 76	TABULATED SOURCE	DATA - IH4			PAGE 295
	UPWT	1859 (1M4) O1 ALONE	ORB. VERT. TAIL	(RQ3VCB)	
MACH (2) = 2.950	ALPHA (4) = 20.0	00 PINF = .66350	Q(PSI) = 4.0417	RN/L = 3.0200	CPSTG = 1.7529
SECTION (1) ORB. VERT	. TAIL E	EPENDENT VARIABLE CP/CPS	· ·		
Z/BV .2990 .5	320 .7650 .9050				
0. 2550. 008.					
MACH (3) = 3.700	ALPHA (1) = -10.0	00 PINF = .32910	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1)ORB. VERT	. TAIL C	EPENDENT VARIABLE CP/CPS			
Z/BV .2990 .5	320 .7650 .9050				
.300 .1223 .0 .500 .0 .700 .0	1458 .5263 .6944 787 .0852 1903 179 1330044				
MACH (3) = 3.700	ALPHA (2) = -5.0	00 PINF = .32910	Q(PSI) = 3.1539	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1)ORB. VERT	TAIL (EPENDENT VARIABLE CP/CPS	I		
Z/BV .2990 .5	320 .7650 .9050	·			
.300 .0918 .0 .500 .0 .700 .0	854 .4050 .5315 842 .0505 872 892 8920142				
MACH (3) = 3.700	ALPHA (3) = '.	000 PINF = .32910	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1) ORB. VERT	TAIL E	DEPENDENT VARIABLE CP/CPS	i		
Z/BV .2990 .5	.7650 .9050 .9050				
.300 .0515 .0 .500 .0 .700 .0	3384 .2971 .3939 0390 .0265 0488 0038 00340189				·

DATE 20 APR 76	TABULATE	D SOURCE DATA -	144			PAGE 296
		UPWT 1059 (IH4) OI ALONE	ORB. VERT. TAIL	(RQ3)	(CB)
MACH (3) =	3.700 ALPHA (4)	= 5.000 P	INF = .3/910	Q(PSI) = 3.1539	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1)ORB	. VERT. TAIL	DEPENDE	NT VARIABLE CP/CPS			
Z/BV .299	0 .5320 .7650	.9050		·		
X/CV .000 .328 .300 .053 .500 .700 .900 ~.025		.2834				
MACH (3) =	3.700 ALPHA (5)	= 10.000 P	INF = .32910	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG * 1.7839
SECTION (1)ORB	. VERT. TAIL	DEPENDE	NT VARIABLE CP/CPS			
Z/BV .299	0 .5320 .7650	.9050				
X/CV .000 .272 .300 .039 .500 .700 .900032		.2428				
MACH (3) =	3.700 ALPHA (6)	= 20.000 P	INF = .32910	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1)ORB	. VERT. TAIL	DEPENDE	NT VARIABLE CP/CPS			
Z/BV .299	0 .5320 .7650	.9050				
X/CV .000 .224 .300011 .500 .700 .900043		. 1329				
MACH (4) =	4.600 ALPHA (1)	= -10.000 P	INF = .16595	Q(PSI) = 2.4580	RN/L = 3.0100	CPSTG = 1.8033
SECTION (1)ORB	. VERT. TAIL	DEPENDE	NT VARIABLE CP/CPS	•		
Z/BV .299	0 .5320 .7650	.9050	•			•
X/CV .000 .526 .300 .096 .500 .700 .900 .012	3 .0748 .0815 .0752 .0134	.7587				

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.	S.S.	S CO

																•
DATE 20 APR	76		TABULATE	o sourc	E DATA	- 1184								· P	AGE	297
				UPW	T 1059	(1H4)	OI AL	ONE	ORB. VERT.	TAIL			(RQ3VCB)			
MACH (4)	ա կ,	.600 AL	.PHA (2)	= -5	.000	PINF	æ ,	16795	Q(P51) =	2.4580	RN/L	#	3.0100	CPSTG	•	1.8033
SECTION (DORB.	VERT. TA	I L		DEPEN	DENT VA	RIABLE	E CP/CPS								
Z/BV	.2990	.5320	.7650	.9050										•		
X/CV .000 .300 .500 .700 .900	.3035 .0579	.4568 .0450 .0497 .0063 .0024	.4114 .0471 0069	.5508												
MACH (4)	= 4,	600 AL	PHA (3)		.000	PINF	22 .]	16595	Q(PSI) =	2.4580	RN/L		3.0100	CPSTG	=	1.8033
SECTION (DORB.	VERT. TA	IL		DEPEN	DENT VA	RIABLE	CP/CPS						-		
Z/BV	.2990	.5320	.7650	.9050												
X/CV .000 .300 .500 .700	.3235 .0300 0087	.2769 .0214 .0217 0056 0075	.2811 .0228 0135	.3863												
MACH (4)	= 4.	600 AL	PHA (4)	= 5	.000	PINF	= .1	161:95	Q(PSI) =	2.4580	RN/L	=	3.0100	CPSTG	=	1.8033
SECTION (DORB.	VERT. TAI	IL.		DEPEN	DENT VA	RIABLE	E (P/CPS								
Z/BV	.2990	.5320	.7650	.9050				•								
X/CV .008 .300 .500 .700	.2884 .0313 0151	.2534 .0145 .0134 0123 0147	.1774 .0089	.2577												
MACH (4)	= 4 .	600 AL	PHA (5)	= 10	.000	PINF	m .	16595	Q(PSI) =	2.4580	RN/L	•	3.0100	CPSTG	*	1.8033
SECTION (DORB.	VERT. TAI	IL		DEPEN	DENT VA	RIABLE	E CP/CPS								
Z/BV	.2990	,5320	.7650	.9050												
X/CV .000 .300 .500 .700 .900	.0405 .0413	.0406 .0406 .0406 .0403	.0408 .0408 .0408	.0411												

er describer de la composição de la productiva de la composição de la composição de la composição de la compos La productiva de la composição de la composição de la composição de la composição de la composição de la compo La finações de la composição de la composição de la composição de la composição de la composição de la composição DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 298

UPWT 1059 (1H4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCB)

MACH (4) = 4.600ALPHA (6) = 20.000 PINF = .16595Q(PSI) = 2.4580RN/L = 3.0100CP5TG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CO/CPS

Z/BV .2990 .5320 .7650

.9050

X/CV

.000 .300 .500 .700 .0955 .1544 .0615 -.0028 .0049 .0039 -.0113 -.0244 -.0263 -.0261 -.0204 .0860

		o against .									#1. FF1 7 77				
DATE 20 A	APR 76		TABULAT	ED SOURC	E DATA	- 114								PAGE	299
				UPW	T 1059	(1H4) Ot .	ALONE	ORBITER	FUSE	LAGE		(RQ3	BCC) (15 APR	76)
	REFE	RENCE DA	TA									PARAMETR:	C DATA		
SREF = LREF = BREF = SCALE =	2690.0000 1290.3000 1290.3000 0100	INCHES INCHES		= ,	0000 1N 0000 1N 0000 1N	CHES				R	N/L =	5.000	BETA	=	. 900
MACH ()	1) = 2.	950 A	LPHA (1) =	.000	PINF =	1.0999	Q(PSI)	** {	6.6993	RN/L	= 5.002	5 CP	STG =	1.7529
SECTION	(DORBIT	ER FUSEL	AGE		DEPEND	ENT VARIA	BLE CF/C	PS							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1251	. 1500	.1600	.1650	.1700	. 1750	.1800
PHI ,000 10,000 20,000 24,500 39,000	.9919	.5082	.1801	.0998	·	. 0627	.0400	.0269 .0256 .0267 .0266 .0702		.0094				. 3823	
174.000 180.000	.9919				.2409	}		. 1888	. 183 ¹	.2030	.5977	.6790	.6554		.5988
X/LB	.2000	.3000	.4000	.5000	.6000		.8003	.8050	.829	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 000 23.000 24.000 31.500 35.100 35.000 45.000 57.000 66.900 68.000 69.000 79.300 95.700	.0014 .0070 .0107 .0116 .0133 .0349	.0015 0009 0007 0052 0052 0103 0103 0155	.0080	,0086	0073 0030		.0083				0146		0190 .0088 0146	0214	
103.000 105.000 112.600 117.500 120.800 127.900 129.500					0021			.2033	.095	2		.0078		.0051	~.0495

DATE 20 AP	R 76		TABULATE	o sourci	E DATA -	1H4							a.	PAGE	300
				UPW	T 1059 (H4) 01	ALONE	ORBITE	R FUSEL/	AGE		(RQ3)	300)		
MACH (1)	= 2,	950 AL	PHA (1)	=	.000										
SECTION (I)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	°s							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9760	1.0000	1.0145
PHI 130.000 135.000 139.600 144.000		0417			0072				.1510 .1541	.0341		.0133			
155.000 180.000	. 1461 . 0846	0166			0105										
X/LB	1.0250	1.0500													
PH1 .000	0222	0236													
MACH (1)	= 2.	950 A1	.PHA (2)	= 5	.000 P	INF =	1.0998	Q(PSI) = 6.0	3993	RN/L =	5.002	5 CP	STG =	1.7529
SECTION (IJORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE CP/CF	PS .							
X/L8	,0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	. 1250	.1500	.1600	.1650	.1700	. 1750	. 1800
PHI .000 10.000 20.000 24.500 39.000	1.0044	.6048	.2457	.1513		. 1058	.0766	.0606 .0591 .0600 .0608 .0748		.0377					
163.000 174.000								.0746				.5489		.3072	
180.000	1.0044		-		.1770			.1300	.1260	. 1449	.4693		.5234		.4770
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.0290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH! .000 23.000	.0254	.0222	.0282	.0253	.0291		.0301				.0036	-	0004	0027	
24.000 31.500 33.100	.0317 .0358	.0252													
35.000 40.000 45.000	.0380 .0427	.0274 .0326													
50.000 51.600 57.000	, 0470	0056											-,0228		
50.900 65.000 68.000		0055 0071						•			٠		0352		

ORIGINAL PLACES

DATE 20 AF	PR 76		TABULATE	O SOURCE	E DATA -	IH4								PAGE	301
				บคพ	T 1059 (IH4) O1	ALONE	ORBITE	ER FUSEL	AGE		(RQ3è	.CC1		
MACH (1)	= 2.	950 AI	LPHA (2)) = 5	.000										
SECTION (1 1 1 ORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/C	P \$							
X/LB	.2000	.3000	.4000	,5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI 69.000 79.300 95.500 95.700 96.300 103.000	.0432	0113			0185 0187		0164						·		
105.000 112.600 117.500					0231							0101	,	0123	0566
120.800 127.900 129.500						.0721		1000	.0946			0101		0163	
130.000 135.000		0525			0198			. 1288	.1142	.0233		.0025			
139.600 144.000 155.000	.1116								.0962			.0205			•
180.000	.0479	0363			0205										
X/LB	1.0250	1.0500													
PHI .000	0030	0031													
MACH (I)	= 5.	950 AI	LPHA (3)	= 10	.000 P	INF =	1.0998	Q(PS)	() = 6.1	6993	RN/L	• 5.0029	CP	STG =	1.7529
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/C	PS						-	
X/LB	.0000	.0050	.0200	.0900	.0500	.0600	.0800	.1000	. 1250	.1500	. 1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000	.9996	.6982	.3260	.2165		.1625	.1238	.1042 .1016 .1018 .0983 .0759		.0755				.2416	
174.000	0000											.4342		.2416	
180.000	.9996	****	1,000	-non	.1192			.0797	.0838	.0940	.3428		.4024		.3650
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 .000 23.000	.0585	.0492 .0498	.0550	.0556	.0556		.0642				.0328		.0280	.0257	

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 302

ORBITER FUSE AGE (ROSBCC)

				UPW	T 1059 (1	H4) 01	ALONE	ORBITE	R FUSEL	AGE		(RQ3	BCC)		
MACH (1)	= 2.	1A 029	PHA (3	1 = 10	.000									•	
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	P S							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 24.000 31.500 35.000 35.000 40.000 45.000 51.600 57.000 66.900 68.000 69.000	.0619 .0646 .0654 .0641 .0523	.0530 .0537 .0603 0115 0116 0128			0253			·					0575 0506		
95.500 95.700 95.300 103.000 112.600 117.500 120.800 127.900 129.500 139.600 139.600 144.000 156.000	.0448 .0844 .0180	0149 0600 0474			0244 0269 0367 0492	.0141	0462	, 0387	.0702 .0451 .0187	0113		0320 0107 0027		03 41	0617
X/LB	1.0250	1.0500		•									÷		
PHI .000	.0257	.0253										-			

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PAGE 303 TABULATED SOURCE DATA - 1H4 DATE 20 APR 76 (RQ3BCC) ORBITER FUSELAGE UPWT 1059 (IH4) 01 A_ONE CPSTG # 1.7529 ALPHA (4) = RN/L 5.0025 20.000 PINF Q(PSI) = 6.6993SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS . 1750 .1800 X/LB .1600 .1650 .1700 .1000 .1250 .1500 .0000 .0050 .0200 .0400 .0500 .0500 .0800 PHI .000 .9321 .8617 .5131 .3790 .3139 .2546 .2285 .1888 .2236 .2178 10.000 20.000 24.500 . 1992 .0731 39.000 .0712 163.000 174.000 .1330 .1903 .2010 .0355 180.000 .9321 .0356 .0268 .0308 .0654 .9630 1.0000 1.0145 .9750 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 PH! .000 .1245 .1179 .1152 . 1629 .1487 .1605 .1631 .1725 .1613 .1419 24.000 .1569 31.500 33.100 35.000 .1469 .1396 .1379 40.000 .1057 .1285 45.000 .1248 50.000 .0432 51.600 57.000 60.900 -.0716 -.0282 -.0193 65.000 -.0168 -.0756 68.000 69.000 -.0170 79.300 -.0860 95.500 95.700 -.0282 -.0757 -.0221 .0155 96.300

-.0605 -.0431

-.0651

.0165

-.0221

-.0259

-.0362

-.0632

.0035

103.000

105.000

117.500

127.900

129.500

130.000

135.000

139.600

144.000

155.000

180.000

-.0528

-.0585

-.0499

.0445

.0079

-.0102

-.0451

.0322

-.0702

-.0600

CRBITER FUSELAGE (RQ3BCC) UPWT 1059 (1H4) 01 ALONE MACH (1) = 2.950 ALPHA (4) = 20.000 SECTION (1)ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PHI .000 .1168 .1168 -5.000 4,9900 CPSTG = 1.7839 MACH (2) = 3.700 ALPHA (1) = PINE **=** 54768. Q(PSI) = 5.2486SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1700 .1800 .1500 .1600 .1650 K/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 . 1250 PHI COO. .9711 .0297 .0049 -.0060 .3950 . 1204 .0573 .0142 .0033 10.000 20.000 24.500 .0042 39.000 .0585 .4575 163.000 174.000 .8173 .7689 180.000 .9711 .3017 .2434 .2653 .7183 1058. 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 8000 .8050 .8290 .8620 .9500 .9530 .9750 PHI .000 -.0095 -.0108 -.0083 -.0095 -.0097 -.0101 -.0241 -.0267 -.0278 23.000 -.0144 -.0104 31.500 -.0108 33.100 -.0215 35.000 -.0144 40,000 -.0187 -,0263 45.000 -.0294 50.000 .0232 51.500 .0261 57.000 .0061 60.900 .0057 65.000 -.0041 .0117 68.000 69.000 ~.0078 79.300 .0065 95.500 .0067 . 0056 95.700 -.0042 98.300 -0327 103.000 .0069 -.0347 105.000 112.600 .0063 .0055 .0158

.0773

4 63

120.800

TABULATED SOURCE DATA - 1H4

DATE 20 APR 76 PAGE 305 UPWT 1059 (1H4) OI ALCNE ORBITER FUSELAGE (RQ3BCC) 3.700 ALPHA (1) = -5.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 8050 .8290 .9500 .9630 .9750 1.0000 1.0145

PHI 127.900 .2193 129.500 .2080 130.000 . 1462 .0109 .0384 135.000 -.0089 .0055 139.600 . 1625 144.000 .0373 155.000 . 1905 .0082

180.000 .1467 -.0007 X/LB 1.0250 1.0500

PHI

57.000 60.900

.000 -.0286 -.0296 MACH (2) = 3.700 ALPHA (2) =

.54768 Q(PS1) = 5.24864.9900 CPSTG 1.7839 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .0050 .0200 .1800 .0400 .1650 .1700 .1750 .0500 .0600 . 1800 .1000 .1250 .1500 .1600 PHI .0242 .0226 . კიი .4829 .1703 .0932 .0586 . 1362 .0082 10.000

20.000 .0237 24.500 .0258 39.000 .0635 163.000 174.000 180.000 .9766 .2228 .1712 .1662

. 1891 .5620 .6577 .6214 X/L8 0000. .3000 .4000 .5000 .9500 1.0000 .6000 .7800 .8000 .8050 .8290 .9630 .9750 1.0145 .8620

.0018

.3666

-.0174

.6616

-.0158

-.0131

PHI .000 .0010 -.0012 .0007 .0026 .0025 23.000 -.0030 24.000 .0042 31.500 .0073 33.100 -.0024 35.000 .0077 40.000 45.000 .0099 -.0037 -.0045 50.000 .0285 51.600

-.0006

.0028 -.0005

J	.,		INDULNIL		- Unin	4417									
				UPW	T 1059 (1	10 (+H	ALONE	ORBITE	R FUSELA	IGE		(RQ3E	(00)		
MACH 1 23	3.	700 AL	_PHA (2)	=	.000										
SECTION :	CORBIT	ER FUSEL/	AGE		DEPENDEN	IT VARIA	BLE CP/CF	es							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.6000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 65.000 68.000 69.000 79.300	•	~.0050 ~.0081			0053								0119		
95.500 95:700 96.300 103.000	.0345	0059			0040		0068								
105.000 112.600 117.500 120.800 127.900					0047	0057			.0863			.0084		.0131	0400
129.500 129.500 130.000 135.000 139.600		0233			0087	.0967	•	. 1555	.1336	.0375		.0017			•
155.000 180.000	.1471 .1037	0099			0077							.0210			
X/LB	1.0250	1.0500													
PHI .000	0180	0193													
MACH (2)	= 3.	700 AL	PHA (3)	= 5	.000 PI	NF =	.54768	Q(PS)	() = 5.8	2486	RN/L	° 4.9900	CP:	STG =	1.7839
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	NT VARIA	BLE CP/CF	? S							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0900	.1000	.1250	.1500	. 1600	.1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000	.9831	.5811	.2334	.1406		.0984	.0709	.0560 .0597 .0601 .0617		.0364				.2845	
174.000 180.000	.9831				.1601			.1146	.1128	. 1292	.4166	.5099	.5002	•60-70	.4754

PAGE 307 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3BCC) ORBITER FUSELAGE UPWT 1059 (IH4) 01 ALONE: MACH (2) =3.700 ALPHA (3) =5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE (P/CPS 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 PHI .0034 .0000 -.0021 .000 .0252 .0192 .0215 .0203 .0202 .0225 23.600 .0188 .0294 31.500 .0333 33.100 .0221 35.000 .0348 40.000 .0392 .0245 45.000 .0290 50.000 .0433 -.0213 51.600 57.000 -.0016 60.900 -.0020 -.0046 65.000 -.0230 68.000 69.000 -.0051 79.300 -.0135 95.500 -.0136 -.0172 95.700 -.0088 96.300 .0444 103.000 -.0146 -.0430 105.000 112.600 -.0187 117.500 .0018 -.0005 120,800 .0642 127.900 .0544 .1116 129.500 .0956 .0190 -.0020130.000 135.000 ~.0317 -.0192 .0754 139.600 .0107 144.000 155.000 .1098 180.000 .0652 -.0219 -.0184 X/LB 1.0250 1.0500

.000

-.0028 -.0041

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				UPW	T 1059	(IH4) O1	ALONE	ORB I TE	R FUSEL	AGE		(RQ39	BCC)		
MACH (2)	= 3.	700 AL	_PHA (4)	= 10	.000 8	PINF =	.54768	Q(PSI) = 5.	2486	RN/L	4.990) CP	STG =	1.7839
SECTION (1)QR8IT	ER FUSEL/	AGE		DEPENDS	ENT VARIA	BLE CP/CP	·S							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	.1600	.1650	.1700	. 1750	. 1800
PHI .000 !0.000 20.000 24.500 39.000	.9802	.6755	.3077	.2010		. [497	.1260	.1070 .1049 .1058 .1035 .0788		.0768				.2093.	
174.000 180.000	.9802				.1082			.0707	.0775	. 0852	.2596	.3621	.3638		.3489
X/LB	.2000	.3000	.4000	.5000	,6000	.7800	.800	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PH1 .000	. 0559	.0440	.0485	.0482	.0484		.05:9				.0255		.0212	.0190	
23.000 24.000 31.500	.0587	.0435	,,,,,,		**										
33.100 35.000	.0614	.0466													
40.000 45.000 50.000	.0600	.0477 .0550													
51.600 57.000	.0.51	0049											0410		
60.900 65.000 68.000		0048 0053											0288		
69.000 79.300 95.500		0077			0192 0184		0304								
95.700 96.300	.0405	0084					. 650, 4								
103.000 105.000 112.600					0199 0267			•						:	0456
117.500 120.800 127.900		•				0009			.0579			0162		0198	
129.500 130.000 135.000		0375		·	0383			.0251	.0332	0091	٠	0137			
139.600 144.000 155.000	.0791								.0077			0045			
180.000	.0356	0309			0201										

DATE 20 APE	₹ 76		TABULATE				ALONE '	ORÐ I TE	R FUSELA	AGE		(RQ3	3CC)	PAGE	309
MACH (P)	7.	700 AL	_PHA (4)	= 10	.000										
SECTIO .	CROIT	ER FUSELA	AGE		DEPENDE	NT VARIA	BLE CP'CF	P S							
X/LB	1.0250	1.0500													
PHI .000	.0189	.0181													
MACH (2)	= 3.	700 AL	-PHA (5)	= 20	.000 P	INF =	.5476R	· Q(PSI) = 5.a	2485	RN/L =	4.990) CP	STG =	1.7839
SECTION (1)ORBIT	ER FUSEL/	AGE		DEPENDEN	NT VARIA	BLE CP/CF	°5							
X/L8	.0000	.0050	.0200	.0400	.0500	.0600	1080.	.1000	.1250	.1500	. 1600	.1650	.1700	.1750	.1800
PH; .000 .0.000 20.000 24.500 39.000	.9308	. 8508	.4929	.3621		.2954	.2625	.2356 .2321 .2273 .2109 .0831		.1957					
163.000 174.000 180.000	.9308				.0375			.0253	.0295	.0367	.0433	.0712	.1277	.0418	.1467
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500	.1707 .1657 .1547	. 1531 . 1478	.1409	.1467	. 1485		.1618				.1073		.1014	.0984	
33.100 35.000	. 1464	.1469													
40.000 45.000	.1160	.1383 .:343													
50.000 51.600	.0414	2220											0451		
57.000 60.900 65.000 68.000		0256 0109 0107							٠				0447		
69 000 79.300 95.500 95.700 96.300	.0183	0129		• ,	0445 0179		0481								
103.000 105.000	.0103				0167										
112.600 112.600					0233							07110		وعدد	0474
120.800									.0437			0348		0359	

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PAGE 310 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 ORBITER FUSELAGE (ROSECC) UPWT 1059 (IH4) 01 ALONE MACH (2) = 3,700 ALPHA (5) = 20.000SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .9750 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 . 8290 .8E20 .9500 .9630 PHI 127.900 -.0224 129.500 .0374 -.0360 130.000 .0073 -.0287 135.000 -.0419 -.0435 139.600 -.0101 144.000 -.0362 155.000 .0138 180.000 -.0061 -.0391 -.0389 X/LB 1.0250 1.0500 PHI .000 .1014 .1014 CPSTG = 1.80335.0000 4.600 ALPHA (1) = ~5.000 PINF .27610 Q(PSI) = 4.0900SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1750 .1800 X/LB .1500 .1600 .1650 .1700 .0000 .0050 .0200 .0400 .0500 .0600 0800 .100u .1250 PH1 .000 .9992 .4052 .0016 .1287 .0635 .0150 0219 .0123 10.000 .0107 20.000 .0109 24.500 .0125 39.000 .0609 .4732 163.000 174.000 .8696 .8492 180.000 .9992 .2958 .2367 .2610 .7370 .8894 .9500 1.0000 1.0145 X/LB .2000 .3000 .4000 .5000 .6000 .7800 8000 .8050 .8290 .8620 .9630

PHI .000 -.0023 -.0050 -.0032 -.0019 -.0022 -.0074 -.0192 -.0200 -.0202 23.000 -.0034 -.0034 -.0034 -.0034 -.0033

33.100 -.0114 35.000 -.0055 40.000 -.0078 -.0155 45.000 -.0183 50.000 .0285

57.000 .0090 60.900 .0087 .0181

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 311 UPWT 1059 (1H4) 01 ALCNE ORBITER FUSELAGE (RQ3BCC) MACH ALPHA (1) = 4.600 -5.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS 1.0000 1.0145 X/LB .2000 .3000 :4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 PHI 65.000 ,0024 68.000 .0050 69.000 -.002: 79.300 .0063 95.500 .0062 .0062 95.700 96.300 103.000 .0015 .0413 .0012 105.000 -.0274 112.600 .0005 117.500 120.600 .0042 .0008 .0773 127.900 .1963 129.500 .1908 1800. .1354 .0362 135.000 -.0041 .0063 139.500 .1451 .0129 144.000 155.000 .2016 180.000 . 1655 .0014 .0120 X/LB 1.0250 1.0500 .000 -.0212 -.0218 CP5TG = 1.8033= 5.0000 MACH (3) = 4.600 ALPHA (2) = .27610 Q(PS1) = 4.0960RN/L SECTION (I) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .1600 .1650 .1700 .1750 .1800 .0000 .0050 .0200 .0400 .0500 .0600 . 1800 .1000 .1250 .1500 .000 1.0039 .4927 .1775 .0984 .0628 .0466 .0342 .0172 10.000 :0320 20.000 .0337 24.500 39.000 .0356 .0683 163.000 .3691 .6689 174.000 .6875 .6725 1.0039 . 1597 .1827 .5450 180.000 .2185 .1641

				UPA	NT 1059 (1	H41 01	ALONE	QRBITE	ER FUSELA	AGE		(RQ3	BCC1		
MACH (3)	= 4.	600 AL	_PHA (2)	=	.000										
SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDEN	T VARIA	BLE CP/CF	es							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI .000 23.000 24.000	.0091	.0053	.0025	.0037	.0034		.029				0094		0116	0123	
31.500 33.100 35.000 40.000 45.000	.0153 .0151 .0177	.0048 .0036 .0036											٠		
50.000 51.600 57.000 60.900	.0349	.0064											.0008		
65.000 68.000 69.000 79.300		.0015			0018								-,0084		
95.500 95.700 96.300 103.000 105.000	.0425	.0006			0018		0370								0275
112.600 117.500 120.800 127.900					0054	.0856			.0834			.0048		.0089	
129.500 130.000 135.000 139.600 144.000		0105			0089			. 109 t	.1106	.0401		.0028			
155.000 180.000	. 1528 . 1200	0081			0047							.0133			
X/LB	1.0250	1.0500													
PH (.000	0133	0199													

DATE 20 AF	PR 76		TABULATE	ED SOURC	E DATA -	- IH4								PAGE	313
				UPW	IT 1059 (1H41 01	ALONE	ORBITE	R FUSELA	GE		(RQ3	BCC)		
MACH (3) = 4,	600 AL	LPHA (3) = 5	.000 F	INF =	.27610	Q(PS)	() = 4.(900	RN/L :	5.00 0	O CP	STG =	1.8033
SECTION	(DORBIT	ER FUSEL/	AGE		DEPENDE	NT VARIA	BLE (P/CF	PS							
X/LB	.0000	.0050	.0200	.0400	.0500	.0660	.0800	.1000	.1250	.1500	.1600	.1650	. 1700	. 1750	. 1800
PHI .000 .0.000 20.000 24.500 39.000 163.000	1.0094	.5966	.2416	. 1463		. 1025	.0771	.0614 .0593 .0611 .0625		.0390			÷	.2672	
174.000 180.000	1.0094				. 1532			. 1069	.1078	.1226	. 3563	.4672	.4910		.4899
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000	. 0269 . 0294	.0189	.0199	.0198	.0196		.0201				.0046		.0018	.0001	
31.500 33.100 35.000 40.000	.0328 .0340 .0374	.0221													
45.000 50.000 51.600 57.000	.0408	.0287											0215		
60.900 65.000 68.000		.0045											0095		
69.000 79.300 95.500		.0008			0097 0108		0144						.0025		
95.700 96.300 103.000	.0430	0035			0113										
105.000 112.600 117.500					0116				000			.0009		.0018	0291
120.800 127.900 129.500 130.000						.0153		.0585	.0420	0150		0045			
135.000 135.600 144.000		0184			0171				.0654 .0542	.0159		0013			
155.000 180.000	.1081 .0776	0113			0150							-,0013			

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PAGE 314

SECTION ()) ORBITER FUSELAGE DEPENDENT VARIABLE CF/CPS X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .18 PHI .000	DATE 20 AP	7K 7B		IABULATE	D SOURC	E DATA -	144								INUL	J
X/LB	ů.				UPW	T 1059 ()	IH4) OI	ALONE	ORBITE	ER FUSEL/	AGE		(RQ3E	BCC)		
NACH 1.0250 1.0500 1.0500 1.0000 1.0	MACH I E	4.0	500 AL	.PHA (3)	= 5	.000										
PHI	SECTION :	1:088111	ER FUSELA	√GE		DEPENDEN	NT VARIA	BLE CP/CF	°S							
MACH (3) = 4.600	X/LB	1.0250	1.0500													
SECTION (-1) ORBITER FUSELAGE DEPENDENT VARIABLE CF/CPS		0006	0019													
X/LB	MACH (3)) = 4.6	300 AL	.PHA (4)	= 10	.000 PI	NF =	.276;0	· QCPS	[] = 4.(900	RN/L	= 5.0000) CP	STG =	1.8033
PHI	SECTION ((-110RBITI	ER FUSELA	AGE		DEPENDEN	NT VARIA	BLE CF/CF	- S							
.000 1.0006 .5922 .3154 .2055 .1534 .1254 .1007 .0717 10.0000 20.000 20.000 .9969 39.000 1.0006 .5000 .00000 .00000 .00000 .00000 .0000 .00000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .	X/LB	.0000	.0050	.0200	.0480	.0500	.0600	.0800	.1000	.1250	.1500	.1600	. 1650	.1700	. 1750	.1800
174.000 180.000 1.0006 1.0006 1.0006 1.0006 1.0006 1.0006 1.0009 1.0000 1.0006 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.000000 1.00000 1.000000 1.000000 1.0000000 1.00000000	.000 10.000 20.000 24.500 39.000	1.0006	.6922	.3154	.2055		. 1534	. 1254	. 0972 . 0989 . 0968		.0717				1851	
PHI	174.000	1.0006				.1019			. 064 1	.0723	.0789	. 1778	.2503	.3189	. 1631	.3265
.000 .0555 .0437 .0473 .0479 .0479 .0504 .0257 .0217 .0191 23.000 .0556 31.500 .0577 33.100 .0577 40.000 .0559 .0482 45.000 .0559 .0482 45.000 .0431 51.600 .0431 51.600 .0003 65.000 .0003 65.000 .0002 79.300 .0002 79.300 .0002 79.300 .0002 79.300 .0001 95.700 .0001 96.300 .0391 103.000 .0391 103.000 .0391 103.000 .0391 103.000 .00020179017900770092	X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
45.000 .0526 50.000 .0431 51.600 .0004 60.900 .0003 65.000 .0002 69.000 .0002 79.300 0130 95.500 0123 95.700 .0001 96.300 .0381 103.000 0135 105.000 0179 112.600 0077 007 0092	.000 23.000 24.000 31.500 33.100	.0566 .0577	.0442	.0473	.0479	.0479		. 0504				.0257		.0217	.0191	
50.000 .0431 51.600 57.000 .0004 60.900 .0003 65.000 .0002 68.000 69.000 .0002 79.3000130 95.50001230174 96.300 .0391 103.0000135 105.000 112.600017900770092	40.000															
68.0000221 69.000 .0002 79.3000130 95.5000123017+ 95.700 .0001 96.300 .0391 103.0000135 105.000 112.60001790092	50.000 51.600 57.000 60.900	.0431	.0004											0267		·
103.0000135025 105.000 112.600017900770092	68.000 69.000 79.300 95.500 95.700		.0002			0123		017+		·				0221		-
	103.000 105.000 112.600 117.500	.0381				0135				.0480			0077		0092	0293

DATE 20 APR 76

57.000

60.900

-.0184

-.0037

PAGE 315 TABULATED SOURCE DATA - IH4 UFWT 1059 (IH4) 01 ALONE ORBITER FUSELAGE (RQ3BCC) 4.600 ALPHA (4) = 10.000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .9630 1.0000 1.0145 .3000 .4000 .5000 .6000 .7800 .8001 .8050 .8290 .8620 .9500 .9750 PHI 127.900 -.0079 129.500 .0118 130.000 .0289 -.0059 -.0119 135.000 -.0211 -.0213 139.600 -.0060 144.000 -.0084 155.000 .0634 180.000 .0429 -.0181 -.0161 X/LB 1.0250 1.0500 PHI .000 .0189 .0177 CPSTG = 1.8033 MACH (3) =4.600 ALPHA (5) = 20.000 PINF = .27610 Q(PSI) = 4.0900RN/L = 5.0000 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB .0000 .1700 .1750 .1800 .0050 .0200 .0400 .0500 .0600 .080C .1000 .1250 .1500 .1600 .1650 PHI .000 .9328 .8569 .4929 .3619 .2944 .2429 .2181 .1805 10.000 .2149 20.000 .2112. 24.500 . 1961 39.000 .0777 163.000 .0295 174.000 .0467 180.000 .9328 .0804 .1039 .0376 .0381 .0345 .0226 .0267 X/LB .2000 1.0000 1.0145 .3000 .9630 .9750 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .000 .1579 .1408 . 1441 .1511 . 1523 .1647 .1081 .1000 .0916 23.000 .1365 24.000 31.500 . 1534 .1451 33.100 .1445 35.000 .1374 40.000 .1089 .1374 45.000 .1323 50.000 .0431 51.600 -.0289

PAGE 316

DATE ED ALL	. ,0		MOULAIG	D SOUNCE	DMIM	1117									
				TWRU	1059 (1H4) O1	ALONE	ORBIT	ER FUSEL	AGE		(RQ39	BCC)		
MACH (3)	= 4.	600 AL	PHA (5)	= 20.	000										
SECTION (1)ORBIT	ER FUSELA	AGE		DEPENDE	NT VARIA	BLE CP/CF	. S							
X/L8	.2000	.3000	-4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 65.000 68.000 69.000 79.300		0024 0033			02 7 7 0108		0297						0284		
95.500 95.700 96.300 103.000 105.000 112.600	.0218	0041			0108 0107 0158		0297								0313
117.500 120.800 127.900 129.500						0119		.0229	.0409			0197		0211	
130.000 135.000 139.600		0279			0276			•0449	.0060	0162		0257			
144.000 155.000 180.000	.0123	0199			0237							0260			
X/LB	1.0250	1.0500													
PHI .000	.0967	.0929		r											

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DATE 20 APR 76
                                                                                                                  PAGE 317
                          TABULATED SOURCE DATA - IH4
                                      UPNT 1059 (IH4) 01 ALONE
                                                                   ORB. UPPER WING
                                                                                                    (R03UCC)
                                                                                                              ( 15 APR 76 )
             REFERENCE DATA
                                                                                                PARAMETRIC DATA
SREF = 2690.0000 SQ.FT.
                                                                                                                         .000
                           XMRP =
                                        .0000 INCHES
                                                                                      RN/L
                                                                                                   5.000
                                                                                                          BETA
    = 1290.3000 INCHES
LREF
                           YMRP
                                        .0000 INCHES
BREF = 1290.3000 INCHES
                                        .0000 INCHES
                           ZMRP
SCALE =
             .0100
MACH (1) =
               2.950
                        ALPHA ( [) =
                                         .000 PINE
                                                                    Q(PSI) = 6.6993
                                                                                         RN/L
                                                                                               = 5.0025
                                                                                                              CPSTG = 1.7529
                                                      = 1.0998
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
WB/YS
           .4000
                  .6000
                           .8000
 X/CW
    .050
           .1104
    .200
          -.0103
                   .0124
                           .0718
    .60Ő
          -.0609
                  -.0628
    .800
                  -.0676
    .900
                   .0500
                          -.0504
    .950
                  -.0594
MACH = {1} =
               2.950
                        ALPHA(2) = 5 700 PINF = 1.0998
                                                                    Q(PSI) = 6.6993
                                                                                         RN/L
                                                                                                  5.0025
                                                                                                              CPSTG = 1.7529
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
MB/A2
           .4000
                  .6000
                           .8000
 X/CW
    .050
           .0689
    .200
         -.0342
                  -.0151
                           .0302
    .600
         -.0720 -.0726
    .800
                  -.0759
    .900
                   0544
                          -.0595
    .950
                  -.0625
               2.950
MACH (1) =
                        ALPHA ( 3) =
                                                                                                              CPSTG = 1.7529
                                      10.000 PINF
                                                     = 1.0998
                                                                    Q(PSI) = 6.6993
                                                                                         RN/L
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
SA/BM -
           .4000
                  .6000
                           .8000
  X/CH
    .050 -.0099
         -.0589
                  -.0454
-.0773
    .200
                           .0002
          -.0789
    .600
    .800
                   -10774
    .900
                   .0594
                          -.0707
    .950
                   -.0648
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	DATE 20 APP	₹ 76		TABULATED !	SOURCE DATA	- IH4 ,							P	AGE	318
					UPWT 1059	(IH4) OI	ALCNE	ORB. UPPER	WING		(R	1030601			
	MACH (1)	= 2.	950 AL	PHA (4) =	20.000	PINF =	1.0998	Q(PSI) =	6.6993	RN/L	= 5.0	025	CPSTG	=	1.7529
٠	SECTION (110RB.	UPPER WIN	IG .	DEPEN	DENT VARI	ABLE CP/CPS								-
	SA\BM	.4000	6000	.8000			•	*							
	X/CM	0775	•						•						
	.050 .200 .600	0732 0799 0800	.0587 0690	.0535		***									
	.600 .900 .950		~.0423 ~.0740 .3207	0720					· .			-			
į.	MACH (2)	= 3.	700 AL	PHA (1) =	-5.000	PINF =	.54768	Q(PSI) =	5.2486	RN/L	= 4.9	800	CP5TG	=	1.7839
	SECTION (110RB.	UPPER WIN	IG	DEPEN	DENT VARI	ABLE CP/CPS		٠.						
	SANBM	.4000	.6000	.8000											
	X/CW .050 .200 .600 .800	.1299 .0237 0284		.1315											
	.950		0240		•	ě		•	+						
	MACH (2)			PHA (2) = IG			.54768 ABLE CP/CPS	Q(PSI) =	5.2486	RN/L	= 4,9	900	CPSTG	=	1.7839
	2Y/BW	.4000	.6000	.8000				•		. •					
	X/CW .050 .200	.1041 .0025	. 0299	.0878				e e e	•						
P	.600 .800 .900 .950	0404	0366 0404 .0404 0338	0226								•		•	

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PAGE 319
DATE 20 APR 76
                          TABULATED SOURCE DATA - IH4
                                      UPWT 1059 (IH4) 01 ALONE
                                                                   ORB. UPPER WING
                                                                                                   (RQ3UCC)
MACH ( 2) =
                                                                                                             CPSTG = 1.7839
               3.700
                        ALPHA (3) =
                                                                    Q(PSI) = 5.2486
                                                                                        RN/L
                                                                                               = 4.9900
                                       5.000
                                               PINF
                                                      = .54768
 SECTION ( 1) ORB. UPPER WING
                                         DEPENDENT VARIABLE CP/CPS
SA/BM
            .4000
                   .6000
                           .8000
 X/CM
    .050
         .0624
    .200
         -.0213
-.0459
                  -.0020
    .600
                  -.0452
    .900
                  -.045
                   .0404 -.0349
    .950
                  -.0391
                                                                                                             CPSTG = 1.7839
MACH ( 2) =
               3.700
                       ALPHA ( 4) = 10.000 PINF
                                                    = .54769
                                                                    Q(PSI) = 5.2486
                                                                                                  4.9900
 SECTION ( 1) ORB. UPPER WING
                                         DEPENDENT VARIABLE CP/CPS
SA/BM
          .4000
                   .6000
                           .8000
 X/CW
    .050
           .0030
    .200
          -.0409
                  -.0178
                           .0218
          -.0495
    .600
                  -.0485
    .800
                  -.0487
    .900
                   .0426 -.0384
    .950
                  -.0416
                                                                                                             CPST6 = 1.7839
MACH ( 2) =
               3.700 ALPHA (5) = 20.000 PINF
                                                     = .54769
                                                                    Q(PSI) = 5.2486
                                                                                        RN/L
                                                                                               = 4.9900
 SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
SAVEM
            .4000
                  .6000
                           .8000
  X/CW
         -.0364
-.0481
    .050
    .200
                  -.0403 -.0126
    .600
          -.0516
                  -.0502
    .800
                  -.0501
    .900
                    .0439
                         -.0453
    .950
                   -.0418
```

ORIGINAL PLANTING TO THE PARTY OF THE PARTY

DATE 20 APR 76 TABULATED S	OURCE DATA - 1H4		•	PAGE 320
	UPWT 1059 (IH4) 01 ALONE	ORB. UPPER WING	(RQ3UCC)	
MACH (3) = 4.600 ALPHA (1) =	-5.000 PINF = .27810	Q(PSI) = 4.0900 RN/I	L = 5.0000	CPSTG = 1.8033
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS			· •
0008. 0008. 0004. WB/YS				
X/CW .050 .1192 .200 .0249 .0629 .1507				
.60002120140 .8000203 .900 .0386 .0053 .9500138				
MACH (3) = 4.600 ALPHA (2) =	.000 PINF = .27610	Q(PSI) = 4.0900 RN/	L = 5.0000	CPSTG = 1.8033
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS			
0008. 0008. WBYYS				
X/CW .050 .0984 .200 .0058 .0349 .0941 .60002600218 .8000247 .900 .03910101 .9500177				
MACH (3) = 4.600 ALPHA (3) *	5.000 PINF # .27610	Q(PSI) = 4.0900 RN/	L = 5.0000	CPSTG = 1.8033
SECTION (1) ORB. UPPER WING	DEPENDENT VARIABLE CP/CPS			
.4000 .6000 .8000				
X/CW .050 .0612 .2000125 .0109 .0582 .60002790261				
.8000263 .900 .04000155 .9500200				•

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PAGE 321
DATE 20 APR 76
                         TABULATED SOURCE DATA - 1H4
                                                                                                 (RQ3UCC)
                                     UPWT 1059 (1H4) 01 ALONE
                                                                 ORB. UPPER WING
                                                                                             ≃ 5.0000
                                                                                                           CPSTG = 1.8033
               4.500 ALPHA ( 4) = 10.000 PINF
                                                     = .27610
                                                                  Q(PSI) = 4.0900
 SECTION ( 1) ORB. UPPER WING
                                         DEPENDENT VARIABLE CP/CPS
SA/BM
           .4000
                   .6000
                           .8000
 X/CH
   .050
          .0101
    .200
          -.0254 -.0027
                          .0323
   .600
          -.0308 -.0288
    .800
                  -.0285
   .900
.950
                  .0406 -.0183
                  -.0214
                                                                  Q(PSI) = 4.0900
                                                                                             = 5.0000
                                                                                                           CPSTG = 1.8033
MACH (3) = 4.600
                       ALPHA ( 5) =
                                                                                       RN/L
                                      20.000
 SECTION ( 1) ORB. UPPER WING
                                       DEPENDENT VARIABLE CP/CPS
2Y/BW
           .4000
                 .6000
                         .8000
  X/CM
    .050
          -.0197
    .200
          -.0279
                 -.0193 -.0045
    .600
          -.0304
                 -.0287
    .800
                  -.0282
    .900
                   .0412 -.0202
    .950
                  -.0208
```

PAGE 322

				UPNI	1059 (10 (#H1	ALONE	ORB. L	OWER WI	NG			(RQ3LC	c) (15 /	APR 76)
	PEFERE	ENCE DAT	Α									PAI	RAMETRIC	DATA	
LREF =	2590.0000 9 1290.3000 1 1290.3000 1 0100	INCHES	XMRP = YMRP = ZMRP =		0000 INC	HES				R	VL =		5.000	BETA =	.000
MACH (1) = 2.95	50 AL	PHA (1)	= .	.000 P	INF . =	1.0998	Q(PSI) = 6.6	3 993	RN/L	=	5.0025	CPSTG	= 1.7529
SECTION	(1)ORB. LO	DWER WIN	s i		DEPENDE	NT VARIA	BLE CP/CF	PS .		į					
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
X/CH .000 .001 .002 .003		.0021	.0014		.2296	.3187 .0562 .0196 .4524 .1018	.3286	.3807 .0592 .0449 .4123 .0999		0156					
.005 .025 .045				.0251	.0301	.0335	.0577	.0450					•	•	
.100 .153 .177 .200 .299	0026			0053	.0004	1050.		.0469	.0551						
.302 .428 .444 .487	.0057			.0005	.0167	.0183	.0383								
.559 .600 .700	.01 44			.0213	.0107	.0107 0071									
.800 .850 .900	.017.			0339		0210 0295 0373	0352		0262						
MACH (1	1 = 2.99	50 AL	PHA (2)) =	.000 P	INF =	1.0998	QIPBI) = 6,	6993	RN/L	=	5.0025	CPSTG	.= 1.7529
SECTION	(1)ORB. LO	OWER WIN	G		DEPENDE	NT VARIA	BLE CP/C	PS							
SANBM	.2500	.3011	.3480	.4000	-5000	.6000	.7500	.8500	.9500	.9980					
X/CH .000 .001 .003 .004 .005		.0269	.0255		.3053	.3931 .1374 .0915 .4253 .1944 .1091	.3921	.3946 .1298 .1100 .3501 .1801	· .	0484					

.1303

.1242

.1074

.487

.559

-600

TABULATED SOURCE DATA - IH4 (RO3LCC) UPWT 1059 (IH4) 01 ALCINE ORB. LOWER WING MACH | 1 12 = 2.950 ALPHA (3) = 10.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SANBM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 X/CM .700 .0916 .736 .0807 .800 .0602 .850 .0412 .900 .0223 .0225 .0427 .0407 MACH (1) = 2.950 ALPHA (4) = 20.000 PINF = 1.0998Q(PS1) = 6.6993RN/L **5.0025** SECTION (1) ORB, LOWER WING DEPENDENT VARIABLE CP/CPS SANBM 3011 .3480 .4000 .5000 .6000 .7500 X/CW .000 .5539 -.0649 .001 .0660 .0282 .4215 .3924 .5516 .1771 .002 .3112 .5017 .003 -.0527 .3091 .004 .4860 -.0717 .005 .3547 -.0819 .025 .3209 . 1276 .1968 .045 . 2236 .4353 .2890 .100 .3513 .153 .1436 .177 .2775 .200 925. .2044 .1584 .3032 .302 .2134 .428 .444 .1688 .487 .2835 .559 .600 .700 .736 .2428 .2789 .2262 .1991 .800 .850 .900 .1739

.1461

.1139

.1476

DATE 20 APR 76	TABULATED SC	URCE DATA - 1H4			-		PAGE 325
		UPWT 1059 (1H4) O	1 ALONE	ORB. LOWER WI	NG	(RQ3LCC)
1ACH (2) = 3.70	ALPHA (1) =	-5.000 PINF	= .51 768	Q(P51) = 5.	2486 RN/L	= 4.9900	CPSTG = 1.783
SECTION (1) ORB. LO	HER WING	DEPENDENT VAR	TABLE CP/C	PS .			
2Y/BW .2500	.3011 .3480 .40	00 .5000 .600	0 .1'500	.8500 .9500	.9980		
X/CW					_		
200.	.03740379	.265 .1671 .026 003	60 . 8890. 18 12	.3790 .0312 .0121 .4892	0026		
.004 .005 .025	03	.067 008 - 53 53 - 0035		.0635 .0174			•
.045 .100	03			.0183 .0282			
.530288 .51 .200 .2990321	03	0332 72					
.5950321 .428 .4440280	03	64 020	1803. Si		•		·
.487 .559	 0£		10	•			
.600 .700 .7360141		027 034			•		
.800 .850 .900	03	040 043 74044		0253		•	
MACH (2) = 3.70	0 ALPHA (2) =	.000 PINF	= .54768	Q(PSI) = 5.	.2486 RN/L	= 4.9900	CPSTG = 1.78
SECTION (1) ORB. LO	WER WING	DEPENDENT VAR	RIABLE CP/C	PS			
2Y/8W .2500	.3011 .3480 .40	00 .5000 .600	.7500	.8500 .9500	.9980		
X/CM	•	***	20 ·	110C7	0012		
.000 .001 .002 .003	.0005 .0014	512. 880. 0485. 880. 844.	3460 35	.4063 .0768 .0544 .4450	-0015		
.004 .005 .025	.01	.114 .048	1 9	.1278 .0576	•		•
.045 .100	.00			.0580 .0718			
.1530033 .177	**	.0028					

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DATE 20 APP	76.		TABULATE	D SOURCE	E DATA -	1H4						•	PAGE	326
	:	•		UPW	T 1059 (IH4) 01 A	ALONE	ORB. L	OWER WIN	NG		(RQ3LCC)		
MACH (2)	≃ 3 .	700 AL	PHA (2)	=	.000									
SECTION (DORB.	LOWER WIN	G		DEPENDE	NT VARIA	BLE CP/CF	95						
SANEM	.2500	.3011	.3480	.4000	.5000	.6000	7500	.8500	9500	.9980				•
X/CH .302 .428 .444 .487 .559	.0001		<u>.</u>	0039	.0061	.0144	.0380							
.600 .700 .736	.0030		·			.0071 0067								
.800 .850 .900				~.0261		0167 0228 0279	0227		0144					
MACH (2)	= 3.	700 AL	PHA (3)	≈ 5	.000 P	inf =	.54768	Q(PSI) = 5.8	2486	RN/L	- 4.9900	CPSTG =	1.7839
SECTION (1JORB.	LOWER WIN	G		DEPENDE	NT VARIĀ	BLE CP/CF	°5						
SANEM	.2500	.3011	3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980				
X/CW .000 .001 .002 .003 .004		. 0257	.0235		.3083	.3976 .1455 .0978 .4362 .1931	.4103	.4220 .1385 .1091 .3927 .2012		0280				
.005 .025 .045				.0971 .0985	. 1308	. 1 172	.1180	.1150						
.100 .153 .177 .200 .299	.0268			.0341	.0551	.0796		1279	.1281					
.302 .428 .444	.0226			.0358		.0684	.0512							
.487 .559 .600 .700 .736	.0323			.0468	.0588	.0553 .0326						•		
. 736 . 800 . 850 . 900	.0353			0062	•	.0150 .0047 0045	.0054		.0124					

TABULATED SOURCE DATA - IH4

UPWT 1059 (IH4) O1 ALONE

ALPHA (4) = 10.000 PINF = .54738

DATE 20 APR 76

MACH (2) a

.100

. 153

.177

.200

.1543

. 1493

3.700

SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SANBM .2500 .3011 .3480 .4000 .5000 .6000 .8500 .9980 .75 10 X/CW .000 .4355 -.0371. .001 .0319 .3795 .2237 .4778 .2178 .0150 .002 .:642 .1854 .003 .3349 .4262 .2859 .004 .2912 .1929 .005 . 1891 .025 .1317 .2074 .21"3 .045 .1376 .100 .1729 .1475 .2049 .153 .0573 .1102 .177 .200 .0756 .299 .0528 .302 .1631 .0767 .1317 .428 . 444 .0564 .487 .1135 .559 .0899 .600 .1106 .700 .0805 .736 .0659 .0532 .800 .850 .0377 .900 .0202 .0230 .04:5 .0451 CPSTG # 1.7839 MACH (2) = 3.700 ALPHA (5) = 20.000 PINF = .54768Q(PSI) = 5.2486RN/L = 4.9900 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CF/CPS SA/BM .3011 3480 .4000 .5000 .6000 .75(0 .8500 .9500 .9980 X/CW .000 .6320 .3364 -.0354 .001 .0620 .0350 .4700 .6454 .4005 .4359 .002 .3441 .3642 .003 .1820 .3910 .004 .5126 .4347 .005 .3736 .2216 .3596 .4650 .025 .045 .2442

.3268

.2523

. 1940

.4052

.2892

ORB. LOWER WING

Q(PSI) = 5.2486

. .

PAGE 327

CPSTG = 1.7839

(RQ3LCC)

4.9900

RN/L

				UPW.	T 1059 (IH4) 01	ALONE	ORB. L	OWER WIN	iQ		(RQ3LCC)			
MACH (2)	= 3.	700 A	LPHA (5) = 20	.000										
SECTION (1)ORB. 1	LOWER WI	NG		DEPENDE	NT VARIA	BLE CP/CF	PS							
SA/BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980					
X/CW .302 .428 .444	. 1593			.2005		.3035	.3367								
.487 .559 .600 .700 .736	. 1832			.2174	.2707	.2716 .2195								-	
.800 .850 .900				.1074		. 1694 . 1409 . 1126	.1280		.1278			·			
MACH (3)	= 4.0	600 A	LPHA (1) = -5	.000 P	INF =	.27610	QIPS	1) = 4.0	900	RN/L	= 5.0000	CPSTG	*	1.8033
SECTION (1)ORB. I	LOWER WI	NG		DEPENDE	NT YARIA	E CP'CF	- s					•		
2Y/8W	.2500	.3011	.3480	.4000	.,5000	.6000	.750°)	.8500	.9500	.9980					
.000 .000 .003 .003 .004 .006		0206	0235		.1974	.2856 .0392 .01!4 .4924 .0906	.3418	.4476 .0587 .0341 .5815 .0904		.0082					
.025 .045 .100				0176 0190	.0171	.0122	.0417	.0367	.0465						
.153 .177 .200 .299	0155 0187			0189	0168										
.302 .428 .444 .487	0187			0217	0207	0054	.0122			-		·			•
.559 .600 .700 .736	0166			0202		0120 0199									
.800 .850 .900	,			~.0264		0245 0269 0283	023"		0141						

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		70

DATE 20 AF	PR 76		TABULAT	ED SOURC	E DATA -	1H4								P	AGE	329
				ŲPW	T 1059 (IH4) OI .	ALONE	ORB. L	OWER WIN	iG			(RQ3LCC)			
MACH (3)	·= 4.6	300 AL	S 1 AH9.) =	.000 P	INF =	.27610	Q(PSI) = 4.0	1900	RN/L	**	5.0000	CPSTG	=	1.8033
SECTION (I IORB. L	OWER WIN	1G		DEPENDE	NT VARIA	BLE CP/CF	PS .								
SANBM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9800	.9980	•					
X/CW .000 .001 .002 .003 .004 .005 .025		.0082	.0086	.0332 .0323	.0633	.3443 .0881 .0447 .4714 .1368 .0633	.3927	.4492 .0982 .0681 .4931 .1681 .0742	.0834	.0110					,	
.100 .153 .177 .200 .299	.0043			0005	.0103	.0393		.0800	.0834					à		
.302 .428 .444 .487 .559	.0004			.0010	.0107	.0197	.0432									
.600 .700 .736 .800 .850	.0034			~.0198		.0113 0003 0099 0154 0192	0131		0024							
MACH (3)) = 4.6	500 Al	_PHA (3) = E	.000 F	INF =	.27610	QtPS) = 4.(900	RN/L	=	5.0000	CPST6	*	1.8033
SECTION ((1)OR8. (OWER WIN	NG		DEPENDE	NT VARIA	BLE CP/3	PS								
5A\BM	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980						
X/CW .000 .001 .002 .003 .004 .005		.0260	.0233	. 0860 . 0856	.3365	.4364 .1560 .0952 .4772 .2113 .1218	.4573 .1549	.4582 .1590 .1224 .4233 .2174 .1276		0126						
.100 .153 .177 .200	.0283			.0334	. 0535	.0866		. 1226	.1172							

(-) .

	DATE 20 APR	76	TABULATE	D SOURCE	DATA -	IH4								PAGE	330
				UPWI	1059 (1	(H4) O1 /	ALONE	ORB. L	OWER WI	NG		(RQ3L	CCI		
. :	MACH ()	= +.600	ALPHA (3)	= 5.	000								•		
	SECTION (1)ORB. LOW	ER WING		DEPENDEN	IT VARIA	BLE CP/CF	s			٠				•
:	SY/BH	.2500	3011 .3480	.4000	,5000	.8000	.7500	.8500	.9500	.9980					
	X/CM														
	.302 .428			.0338		.0691	.0945						•		
	.444 .487	.0204			.0578	•			•		•				
	.559 .600 .700			.0421		.0558 .0349							•.		
	.736 .800	.0256				.0190									
	.850 .900			0020		.0099 1500	.0118		.0179	4.1					
	MACH (3)	= 4.600	ALPHA (4)	= 10.	000 P	INF =	.27610	QtPSI) = 4.	0900	RN/L	= 5.0000	1	CPSTG =	1.8033
7	SECTION (1)ORB. LOW	ER WING		DEPENDEN	NT VARIA	BLE CP/CF	PS					:		
:	2Y/BW		3011 .3480	.4000	.5000	.6000	.7500	.8500	.9500	9980		•	٠		
	The state of	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2011 .2100	.4000	. 5000	.0000	. 7550	.0500	15500		*				
	.000 .001 .002	. • '. •	0364 .0227		.4240	.5431 .2458 .1810	.5399	.3823 .2054 .1732	:	0164		e e			
	.003 .004 .005 .025					.4869 .3152 .2084		.2715 .2760 .1811				٠.	<i>*</i> ,		
	.045			. 1323 . 1384	.2184		.2426		<u>.</u>						
	.100 .153	.0575				1547		. 1928	.1675						
	. 177 . 200 . 299	.0542		.0753	.1103						•				÷
	.302 .428			.0751	•	. 1354	.1492				•				
	.444 .487 .559	.0550		.0846	.1151										
	.600 .700			.070	•	.1144 .0836	*.							•	
	.736 .800	.0623	*:	•		.0565			•						
	.850 .900			.0233	æ	.0418 .0880	.0430		.0528						

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 ORB. LOWER WING UPWT 1059 (IH4) OI ALONE MACH (3) =4.600 ALPHA (5) = 20.000 PINF= .2'610 Q(PSI) = 4.0900RN/L SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA/BM .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CM .7287 .4541 .3603 .4735 .5667 .3534 .4075 .3635 .1578 .000 -.0134 .001 .0809 .5642 .4855 .0541 .002 .003 .004 .4598 .3754 .025 .045 .100 .2326 .3814 .3897 .2537 .3757 .3446 .2828 .153 .177 .200 .299 .302 .428 .444 .487 .559 .600 .700 .1559 .2616 .2015 .1552 .2044 .3223 .3260 .1649 .2783 2555 .2728 .2130 .1829 .800 .850 .1622 .1331 .900 .1079 .1062 .1220 .1367

PAGE 331

CPSTG = 1.8033

(RQ3LCC)

TABULATED SOURCE DATA - IH4

DATE 20 APR 78

UPWT 1059 (1H4) OI ALONE (RQ3VCC) (15 APR 76) ORB. VERT. TAIL PARAMETRIC DATA REFERENCE DATA SREF = 2690.0000 SQ.FT. LREF = 1290.3000 INCHES .000 5.000 XMRP = .0000 INCHES RN/L YMRP = .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 = 5.0025 CPSTG = 1.7529.000 Q(PSI) = 6.6993RN/L $MACH_{1}(1) = 2.950$ ALPHA (1) =PINF = 1.0998SECTION (1) ORB, VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV . 3944 .000 .3772 .2878 .3915 .300 . 1358 .0838 .0393 .500 ..1014 .700 -.0051 -.0336 -.0167 -.0112 .900 RN/L = 5.0025CPSTG = 1.7529MACH (1) = 2.950ALPHA (2) = 5.000 PINF = 1.0998 Q(PSI) = 6.8993SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .5320 .2990 .7650 .9050 X/CV .3440 .008 .3340 .2298 .3043 .300 .1039 .0784 .0379 .500 .700 .0802 -.0210 .900 -.0425 -.0314 -.0193 CPSTG = 1.7529 MACH (1) = 2.950ALPHA (3) = 10.000 PINF = 1.0998 Q(PSI) = 6.6993RN/L = 5.0025 SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .3050 . 1945 .000 .2681 .2489 .0698 .300 .0785 .0359 :500 .0581 .700 -.0302 -.0509 -.0393 -.0291 .900

PAGE 332

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DATE 20 APR 76 TABULATED SOURCE DATA - IH4
                                                                                                     PAGE 333
                              UPWT 1859 (IH4) 0: ALONE
                                                                                        (RQ3VCC)
                                                           ORB. VERT. TAIL
MACH (1) = 2.950 ALPHA (4) = 20.000 PINF = 1.0938
                                                                                                 CPSTG = 1.7529
                                                            Q(PSI) = 6.6993
                                                                              RN/L
                                                                                    = 5.0025
SECTION ( 1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS
Z/BV
          .2990 .5320
                       .7650 .9050
 XZCV
   .000
          .1976 -.0474
                        . 1457
          .0468 -.0575
   .300
   .500
                 .1182
   .700
                 .0329
          .0253 -.0415 .0587
   .900
MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .5476B
                                                                                                 CPSTG = 1.7839
                                                            Q(PS1) = 5.2486
                                                                              RN/L = 4.9900
SECTION ( 1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS
Z/BV
          .2990 .5320 .7650 .9050
 X/CV
   .000
          .3770
                 .4906
                        .3907
          .1023
                .0496
                       .0510
   .500
                 .0701
   .700
                 .0115
        -.0045 .0032 -.0167
   .900
MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54768
                                                          Q(PSI) = 5.2486
                                                                                       4.9900
 SECTION ( 1) ORB. VERT. TAIL
                                   DEPENDENT VARIABLE CP/CPS
Z/ÐV
          .2990
                 .5320
                        .7650 .9050
 X/CV
   .000
          .3637
                 .3475
                        .2974
   .300
          .0557
                        .0263
                 .0328
                 .0558
  .700
                 .0046
   .900
         -.0189 -.0037 -.0213
MACH (2) = 3.700 ALPHA (3) = 5.000 PINF = .54768 Q(PSI) = 5.2486
                                                                              RN/L = 4.9900
                           DEPENDENT VARIABLE CF/CP5
 SECTION ( 1) ORB. VERT. TAIL
Z/BV
          .2990
                 .5320
                        .7650
                               .9050
 X/CV
   .000
                 .3012
                        .2170
                               .2848
   .300
          .0681
                 .0257
                        .0172
                .0407
   .700
                -.0052
        -.0240 -.0129 -.0194
```

X/CV .000

.300

.700

.900

.3154

.0354

.2881

.0233

.0287

.0009

-.0093 -.0016 -.0144

.2904

.0239

DATE 20 APR 76 TAE	BULATED SOURCE DATA	- IH4			PAGE 335
	UPWT 1059	(IH4) O1 ALONE	ORB. VERT. TAIL	(RQ3VCC)	
MACH 1 33 = 4.600 ALPHA	1 (3) = 5.000	PINF = 27610	Q(PSI) = 4.0900	RN/L = 5.0000	CPSTG = 1.8033
SECTION (1)ORB. VERT. TAIL	DEPEN	DENT VARIABLE CP/CPS			
Z/BV .2990 .5320 .7	7650 .9050	ing the second s			•
.300 .0332 .0150 .0	.2615 .2615				
.500 .0172 .7000095 .900015001190	1170				
MACH (3) = 4.600 ALPHA	1 (4) = 10.000	PINF = .27610	Q(PS1) = 4.0900	RN/L = 5.0000	CPSTG = 1.8033
SECTION (1) ORB. VERT. TAIL	DEPEN	DENT VARIABLE CP/:PS			•
Z/8V .2990 .5320 .7	7650 .9050				
	1745 .2120 1132				
.7000145 .900022301840)194				
MACH (3) = 4.600 ALPHA	(5) = 20.000	PINF = .27610	Q(PSI) = 4.0900	RN/L = 5.0000	CPSTG = 1.8033
SECTION (110RB. VERT. TAIL	DEPEN	DENT VARIABLE CP/CPS			
Z/BV .2990 .5320 .7	7650 .9050				•
	9863 .0929 9863 .0929				
	1197				· · · · · · · · · · · · · · · · · · ·

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 							, a the second		i pirat da da da da da da da da da da da da da	a a francis and area a single	بقدائهم يجري السير	ence to the	ranger to an object was to the	, , , , , , , , , , , , , , , , , , ,			
	DATE 2	DAPE	₹:76		TABULATE	ED SOURC	E DATA -	IH4								PAGE	336
٠						UPh	IT 1059 (1	H4) 01	ALONE	ORBITE	R FUSELA	GE		(RQ3i	BCD) (15 APR	76)
			oerr	RENCE DA	т.								P	ARAMETR:	IC DATA		
	SREF :		9D.0000 90.3000		XMRP :		DODD INCH					RN.	I/L =	3.000	BETA	-	-5.000
	BREF :		0008.089 0100.	INCHES	ZMRP =	= .	DODD INCH	Æ5									
٠. '	MACH	(1)	= 3.	700 AI	LPHA (1)) = - 5	.000 PI	NF =	.32910	Q(PSI)	= 3.1	538	RN/L =	3.000	o ĆP	STG =	1.7839
	SECTIO	ו מכ	1)ORBIT	ER FUSEL.	AGE	•	DEPENDEN	IT VAFIA	BLE CP/C	-S							
	X/LB		.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	. 1500	.1600	. 1650	.1700	.1750	.1800
	PHI											:				•	
	. OI	00	.9703	.4078	.1287	,0610		.0318	.0146	.0042		0070					
	10.00 20.00									.0031 .0054							
	24.50	00	44							.0115							
	39.00 163.00		in the second second							.0912						.5440	
	174.00	00				•								.8654			
	180.0	00	.9703				.2963			.2386	.2335	.2675	.7218		.8069		.7526
	X/LB		.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
	PHI																
	.01		0111	0131	0104	0119	0137		0103				0278		0307	0313	
	23.00 24.00	יים מר	0125	0203												* - * * * * * * * * * * * * * * * * * *	
	31.5	00	0105			-											
	33.11 35.00		~.0149	0224	•												
	40.00	00	0117	0302													
	45.00 50.00		0548	0293													
	51.6	og.	.0510												. 0554		
	57.00 60.90			.0241 .0237					Maria de la companya de la companya de la companya de la companya de la companya de la companya de la companya		•						
	65.0			.0233													
	58.0			0.170	•										.0269		
	69.00 79.30			.0179			.0271										
	95.5	00					0287		.0209								÷
	95.70 96.30		.0872	.0219			· .				•						
	103.0	00	,				.0282										_ 0227
	105.00					10 mm (4)	.0273										0377
	117.5	00							i	٠.				.0412		.0506	
٠. '	120.8 127.9							. 259 t			. 1532				:		
	129.5		18 15				1. 1.			.2743					: .	:	

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DATE 20 AP	R 76 TABULATE	ED SOURCE DATA - 1H4				PAGE 337
		UPWT 1059 (1H4) 0 1	ALONE ORBI	TER FUSELAGE	(RQ	SBCD)
MACH (1)	= 3.700 ALPHA (1)) = -5.000				
SECTION (1) ORBITER FUSELAGE	DEPENDENT VARIA	BLE CP/CPS			en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co
X/LB	.2000 .3000 .4000	.5000 .6000 .7800	.8000 .8050	.8290 .8620	.9500 .9630	.9750 1.0000 1.0145
PHI 130.000 135.000	.0026	.0157		.2021 .0677	.0356	
139.600 144.000 155.000 180.000	.2520 .1478003D	.0065		.1724	.0425	
X/LB	1.0250 1.0500				- 1.00 mg/s = 1.0	
PH1 .000	03220327					
MACH (1)	= 3.700 ALFHA (2)	= .000 PINF =	.32910 Q(P	S1) = 3.1538	RN/L = 3.00	00 CPSTG = 1.7839
SECTION (1)ORBITER FUSELAGE	DEPENDENT VARIA	BLE CP/CPS			4
X/L8	.0000 .0050 .0200	.0400 .0500 .0600	.0800 .1000	.1250 .1500	.1600 .1650	.1700 .1750 .1800
PH(.000 10.000	.9777 .4950 .1795	.0977 .0610	.0379 .0260 .0257			
20.000 24.500 39.000 163.000			.0306 .0384 .1049			. 4475
174.000 180.000	.9777	.2215	. 1693	.1660 .1932	.7110 .5614	
X/LB	.2000 .3000 .4000	.5000 .6000 .7800	.8000 .8050	.0238. 0058.	.9500 .9630	.9750 1.0000 1.0145
PHI .000 23.000	.00130016 .0003 0031	.00000013	.0028		0151	01810192
24.000 31.500	.0080 .0144					
33.100 35.000 40.000 45.000	0007 .0146 .02130019 .0010					
50.000 51.600 57.000	.0820					.0188
60.900 65.000 68.000	.0205 .0200					.0120

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DAIR SO M	'R 76	400	TABULATE	D SOURC	E DATA -	1144	٠.							PAUL	228
				UPL	IT 1059 ()	(H4) O1 .	ALONE	ORBIT	ER FUSEL	AGE		(RQ3	BCD)		
MACH (1	= 3.	700 AI	LPHA (2)	=	.000										
SECTION	1)ORBIT	ER FUSEL	AGE		DEPENDEN	IT VARIA	BLE CP/C	PS							* +,
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	. 8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI	i V '							:							
59.000 79.300		.0153	:14		.0146										
95.500 95.700		0.150			.0140		.0036	•				:			
96.300	.0918	.0144													
103.000 105.000	•				.0151										0411
112.600					.0047							01.00			
117.500 120.800	in the same								. 1459			.0400		.0360	
127.900						.1833				•	• .				
129.500 130.000	•		· · ·					.2208	.1616	.0536		.0184			
135.000 139.600		0142		. :	0058				.1171						
144.000	*								*11/1			.0153			
155.000 180.000	.2077 .1055	0106	•		0113					·. '					
			·		10115						*				
X/LB	1.0250	1.0500													
PH1 .000	0199	- 0206		: .								.:			*
100															
MACH (2)	= 4.	600 AI	LPHA (1)	5	5.000 P	INF =	16610	Q(PS	1) = 2.	4595	RN/L	= 3.010	CP.	STG =	1.8033
SECTION	1)ORBIT	ER FUSEL	AGE		DEPENDE	IT VARIA	BLE CP/C	PS			· · · · · · · ·				
X/LB	.0000	.0050	.0200	.0900	.0500	.0800	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
149		b 11.9	4 **** 4	0554		0700		0100							
.000 10.000	.9919	,4143	. 1341	.0661		.0389	.0220	.0106 .0092		.0000					
20.000 24.500								1510. 1610.			* - *				
39.000			*.					.0965							
163.000 174.000												.9222		.5698	
180.000	.9919				. 2925			.2350	.2309	.2668	.7313		.8774		.8378
X/LB	.2000	.3000	4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI	00).0	0077	niec	000	0175		OO:-1-				- 0103		0212	_ 0212	
.000 23.000	0040	0073 0121	0108	0094	0136		0044				0193		0212	0212	

DATE 20	APR 76		TABULAT	ED SOURCE	E DATA -	IH4								PAGE	339
				UPW	T 1059 (IH4) 01 /	ALONE	ORBITE	R FUSELA	GE		(RQ3	BCD)	•	
MACH (2) = 4 [.]	.600 AI	LPHA (I) = -5	.000	1.					• • • • • • • • • • • • • • • • • • • •				
SECTION	(1)08811	CER FUSEL.	AGE		DEPENDE	NT VARIA	BLE CP/CP	is	•			•		•	
10 to 10 to				COOC	• .				6200	0000	0500	.9630	.9750	0000.1	1.0145
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	• 3030	.5750	1.0000	1.01.40
PH1					•										
24.000	- 0059		100				-								
31.500 33.100	0011	0114									4.		* :	:	
35.000	D059	0114													
40.000	- 0015	0180													
45.000		0165	-												
50.000		A			•	**									•
51.600		0707							÷				.0444		
57.000 60.900		.0327 .0289					•		÷*				•		
65.000		.0257	1									•			
68.000		.,											.0275		
69.000		.0249													
79.300					.0283			•							
95.500		021.0		•	.0263		.0190							• .	
95.700 96.300	.0944	.0240		100											
103.000	1 .0377				.0240										
105.000	i .		•												0228
112.600 117.500	٠.				.0192										:
117.500		10 m										.0318		.0432	
120.800									.1496			1			
127.900 129.500	14.5 14.5					.2329		2520							
130.000								.2576	.1973	.05/89		.0320		1.5	
135.000		.0075	1 *		.0127	**			.1312	102,00		10020		14	
139.600									.1609	:					
144.000					•							.0361			
155.000		0007									. •				
180.000	.1683	0003			0075	1.					•				
X/LB	1.0250	1.0500										•	3		
			•									•	:		

PHI .000

).

PAGE 340 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (RO3BCD) UPWT 1059 (IH4) OI ALONE ORBITER FUSELAGE CPSTG = 1.80333.0100 MACH (2) = 4.600 ALPHA (2) =.000 PINF .16610 Q(PS1) = 2.4595RN/L SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1800 X/LB .1000 .1250 .1500 .1600 .1650 .1700 .1750 .0000 .0050 .0200 .0400 .0500 .0600 .0803 PHI .000 .9957 .5005 . 1845 .1005 .0639 .0495 .0365 .0186 10.000 .0361 20.000 .0422 24.500 .0511 39.000 .1145 .4469 163.000 174.000 .7064 .6595 180.000 .9957 .2153 .1611 .1590 . 1865 .5211 .6771 .9630 .9750 1.0000 1.0145 X/LB .9500 .2000 .3000 .4000 .5000 .6000 ,7800 .8000 .8050 .8290 .8620 PHI ,0048 .0040 .000 .0101 .0019 .0019 -.0012 .0012 -.0148 -.0174 -.0169 23.000 24.000 .0154 31.500 .0243 .0077 33.100 35.000 .0235 .0312 40.000 .0060 45.000 .0105 50.000 .0711 51.600 ..0014 .0261 57.000 60.900 65.000 .0219 .0138 68.000 69.000 .0209 79.300 .0164 95.500 .0118 .0022 95.700 96.300 .0205 .0878 103.000 .0116 -.0233 105.000 112.600 .0065 117.500 .0372 .0440 120.800 .1240 127.900 .0881 129.500 . 1989 130.000 . 1529 .0542 .0144 135.000 -.0025 -.0065 139.600 .1076 .0133 144.000 .2090 155.000 180.000 .1200 -.0033 -.0050

TABULATED SOURCE DATA - 1H4 DATE 20 APR 76 (RQ3BCD) UPWT 1059 (IH4) OI ALONE ORBITER FUSELAGE MACH (2) = ALPHA (2) = .000 SECTION (I) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS X/LB 1.0250 1.0500 PH1 .000

PAGE 341

-.0185 -.0193

PAGE 342

	UPWT 1059 (1H4)	OI ALONE	ORB. UPPER WING		(RQ3UCE)) (15 APR 76)
REFERENCE DATA	•				PARAMETRIC	DATA
SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = BREF = 1290.3000 INCHES ZMRP = SCALE = .0100	.0000 INCHES .0000 INCHES .0000 INCHES			RN/L ≠	3.000	BETA = -5.000
MACH (1) = 3.700 ALPHA (1) =	-5.000 PINF	= .32910	Q(PS1) = 3.153	B RN/L	= 3.0000	CPSTG = 1.7839
SECTION (1) ORB. UPPER WING	DEPENDENT VA	RIABLE CP/CPS				
2Y/BH .4000 .6000 .8000 X/CH .050 .0836 .200 .0065 .0227 .0817		•				
.60003240356 .8000361 .900 .03600214 .9500267				: :		
MACH (1) = 3.700 ALPHA (2) =	.000 PINF	= .32910	Q(PSI) = 3.153	B RN/L	= 3.0000	CPSTG = 1.7839
SECTION (1) ORB. UPPER WING		RIABLE CP/CPS		- ····· -		
			· ·			·
SECTION (1) ORB. UPPER WING 2Y/BW .4000 .6000 .8000 X/CW .050 .0573 .20001540008 .0474 .60004250429 .8000409 .900 .03430273 .9500326						
2Y/BH .4000 .6000 .8000 X/CH .050 .0573 .20001540008 .0474 .60004250429 .8000409 .900 .03430273			Q(PSI) = 2.459		= 3.0100	CP5TG = 1.8033
2Y/BH .4000 .6000 .8000 X/CH .050 .0573 .20001540008 .0474 .60004250429 .8000409 .900 .03430273 .9500326	DEPENDENT VA	RIABLE CP/CPS				CPSTG = 1.8033

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

ORB. UPPER WING

(RQ3UCD)

MACH (2) = 4.600 ALPHA (2) =

DEPENDENT VARIABLE CP/CFS

UPWT 1059 (IH4) 01 ALONE

.000 PINF = .16610

= 3.0100 RN/L

CPSTG = 1.8033

PAGE 343

SA\BM .4000 .6000 .8000

X/CW .05B .200 .600 .800 .900

.0477 -.0077 -.0236

SECTION (1) ORB. UPPER WING

.0523

.0101 -.0215 -.0200 .0372 -.0113

-.0064

Q(PSI) = 2.4595

1110021112	to booker bara filt				I NOE DIT
	UPWT 1059 (1H4) 01	ALONE ORB.	LOWER WING	(RQ3LCD)	(15 APR 76)
REFERENCE DATA				PARAMETRIC DA	ATA
SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = BREF = 1290.3000 INCHES ZMRP = SCALE = .0100	.0000 INCHES		RN/L =	3.000 BB	TA = -5.000
MACH (1) = 3.700 ALPHA (1)	= -5.000 PINF =	.32910 Q(PS	11) = 3.1538 RN/L	≈ 3.0000	CPSTG = 1.7839
SECTION (1) ORB. LOWER WING	DEPENDENT VARIA	ABLE CP/CPS			
2Y/BW .2500 .3011 .3480	.4000 .5000 .6000	.7500 .8500	.9500 .9980		
X/CW .000 .00102290310 .002 .003 .004 .005	.3559 .2439 .0522 .0172 .5950 .1100	.5043 .3945 .0648 .0402 .6332 .0987	.0181		
.025 .045 .100 .1530279	0232 .0178 0250 .0190	.0465 .0531	.0461		•
.2990284	0200 0376 0334 0039	.0240			
.4440284 .487	0217 0303 0142 0255 0327 0376				
		0317	-,0144	·	
MACH (1) = 3.700 ALPHA (2)	= .000 P1NF =	.32910 Q(PS	31) = 3.1538 RN/L	= 3.0000	CPSTG = 1.7839
SECTION (1) ORB. LOWER WING	DEPENDENT VARIA	ABLE CP/CPS		•	
X/CN X/CN .000 .000 .001 .0155 .0144	.4000 .5000 .5000 .4137 .3172 .0997	.7500 .8500 .5402 .4689 .1179	.9360 .9880 +1810.		
.002 .003 .004 .005	.0512 .5730 .1635 .0715	.0871 .5854 .1858 .0925			

PAGE 345 DATE 20 APR 76 TABULATED SOURCE DATA - 1H4 (RQ3LCD) UPHT 1059 (1H4) OI ALONE ORB. LOWER WING MACH (1) = 3,700 ALPHA (2) =.000 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS SA\@M .9500 .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9980 X/CW .025 .0350 .0660 .0979 .045 .0338 .100 .0537 .0913 .0939 . 153 ~.0002 .177 .0187 .200 .299 .302 .428 -.0054 -.0036 -.0044 .0643 .0327 ,444 -.0039 .487 .559 .0133 .0042 .600 .700 .736 .0173 .0031 -.0003 .800 -.0095 -.0172 -.0233 .850 .900 -.0002 -.0285 -.0129 MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .166 0 Q(PSI) = 2.4595RN/L = 3.0100 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CIVCPS SA/BM .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980 X/CM .000 .4039 .0675 .3970 .0629 .0198 -.0077 -.0125 .4762 .003 .004 .005 .0330 .0381 .6963 .5189 .0998 .0492 .0495 -.0048 .025 .0411 .0734 .045 -.0066 .0363 .0576 .153 -.0136 .177 -.0042 ~.0246 .299 .302 .428 ~.0200 -.0240 .0301 .0081 .444 -.0212 .487 -.0121 .559 .600 -.0033

.900

-.0213

(RQ3LCD) UPWT 1059 (1H4) 01 ALONE ORB. LOWER WING MACH (2) = 4.600 ALPHA(1) = -5.000SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CF/CPS. 2Y/BW .2500 .3011 .4000 .5000 .6000 .7500 .8500 .9500 .9980 .3480 X/CH .700 -.0115 -.0214 .736 .800 -.0178 .850 -.0207 -.0230 -.0171 -.0022 .900 -.0233 Q(PSI) = 2.4595= 3.0100 CPSTG = 1.8033MACH (2) = 4.600 ALPHA (2) =.000 PINF = .16610 SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS MB/A2 .8500 .9500 .9980 .3011 .3480 .4000 .5000 .6000 .7503 X/CH .4843 .1304 .0097 .000 .4554 .1076 .3962 .D01 .0260 .0264 .0875 .002 .0816 .6656 .003 .4739 .004 .1670 .005 .1023 .0861 .1023 .1049 .025 .0540 .045 .0516 .0675 .0922 .0922 .100 .0101 . 1.53 .0271 .177 .200 .0031 .299 .0001 .302 .0022 .0647 .428 .0400 ~.0017 .487 .0204 .559 .600 .700 .0061 .0263 .0079 .736 .800 .850 -.0004 -.0056 -.0121

-.0162 -.0080

DATE 20 APR 76 TABULATE	ED SOURCE DATA - IH4		e e e	PAGE 347
	UPWT 1059 (1H4) 01 ALONE 0	RB. VERT. TAIL	(RQ3VCD)	(15 APR 75)
REFERENCE DATA			PARAMETRIC DA	TA
SREF = 2690.0000 SQ.FT. XMRP = LREF = 1290.3000 INCHES YMRP = BREF = 1290.3000 INCHES ZMRP = SCALE = .0100	= .0000 INCHES		RN/L = 3.000 BE	TA = -5.080
MACH (1) = 3.700 ALPHA (1)) = -5.000 PINF = .3291C	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990 .5320 .7650	.9050			
X/CV .000 .3863 .5016 .4527	.5267			
.300 .1922 .1318 .0975 .500 .1568 .700 .0416	1505			
.900 .0149 .0261 .0232	et et e			
MACH (1) = 3.700 ALPHA (2)) = .000 PINF = .32910	Q(PSI) = 3.1538	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS			•
Z/BV .2990 .5320 .7650	.9050			
X/CV .000 .3558 .3640 .3485	.3922	•		
.300 .1510 .1101 .0788	ه حيا منا آن اليه			
.500 .1302 .700 .0316 .900 .0000 .0195 .0189				
) = -5.000 PINF = .16610	Q(PSI) = 2.4595	RN/L = 3.0100	CPSTG = 1.8033
SECTION (1)ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BY .2990 .5320 .7650		•		
X/CY	5500	•		•
.000 .3312 .4855 .4705 .300 .1386 .1001 .0868 .500 .1082	.5509			
.700 .0396 .910 .0179 .0281 .0112				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 348

UPWT 1059 (IH4) OI ALONE ORB. VERT. TAIL (RQ3VCD) MACH (2) + 4,600 Q(PSI) = 2.4595= 3.0100 ALPHA (2) = .000 PINF = 16610 RN/L SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS Z/BV .2990 .5320 .7650 .9050 X/CV .000 .300 .500 .700 .900 .3173 .0705 .0791 .0291 .0195 .3231 .3281 .0574 .0027 .0037

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DATE 20 APR 76 PAGE 349 TABULATED SOURCE DATA - IH4 (RQ3BCE) (15 APR 76) UPWT 1059 (IH4) OI ALONE ORBITER FUSELAGE REFERENCE DATA PARAMETRIC DATA = 2690.0000 SQ.FT. = 1290.3000 INCHES 5.000 .0000 INCHES RN/L SREF = 3.000 BETA LREF YMRP .0000 INCHES BREF = 1290.3000 INCHES ZMRP .0000 INCHES SCALE = .0100 MACH (1) = 3.700 ALPHA (1) = -5.000 PINE = .32905 Q(PSI) = 3.1531RN/L = 3.0000 CPSTG 1.7839 SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS .1700 .1750 1800 .1600 .1650 X/LB .0000. .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 . 1500 PHI .9515 .1254 .0606 .0320 .0227 -.0018 .000 .3890 .0111 10.220 .0085 20.000 .0069 24.500 .0063 39.000 .0356 .3633 163.000 .713B 174.000 .7341 .7769 180.000 .9615 .2918 .2357 .2308 .2553 .6694 1.0000 1.0145 X/LB .8290 .8620 .9500 .9630 .9750 .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 PHI -.0301 -.0309 -.0069 -.0275 .000 -.0089 -.0113 -.0059 -.0068 -.0092 23.000 -.0069 24.000 -.0047 31.500 -.0034 33-100 -.0118 35.000 -.0057 40.000 -.0079 -.0179 45.000 -.0211 50.000 .0082 51.600 .0092 -.0141 57.000 60.900 -.0187 65.000 -.0222 -.000768.000 69.000 -.0255 -.0122 79.300 95.500 -.0122 -.0170 95.700 -.0319 95.300 .0016 103.000 -.0174 -.0415 105.000

-.01B4

.1149

112.600

117.500 120.800

127.900

129.500

(I)

-.0226

.0129

.1269

-.0233

UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RO3BCE)

			•	UPW	IT 1059 (IH4) 01	ALONE	ORB I TE	R FUSEL/	AGE		(RQ3B)	CE)	ŕ	
MACH (1)	= 3.	700 A	LPHA (1) = -5	.000										
SECTION (1)ORBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	- []				:			
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 130.000 135.000 139,600 144.000 155.000 180.000	. 1438 . 1482	0191			0148 .0056				.0806	.0082		0274 .0020			
X/LB	1.0250	1.0500											. :		
PH1 .000	0315	0323													
MACH (1)	= 3.	700 A	LPHA (2	?) =	.000 P	INF =	.32905	Q(PS)	1) = 3,	1531	RN/L	= 3.0000	CP	STG =	1.7839
SECTION	110RBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CF	PS		•					
XxLB.	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500 39.000 163.000 174.000 180.000	.9726	.4762	.1758	.0979	.2176	.0613	.0S#0	.0285 .0243 .0227 .0209 .0339	. 1620	.0110	.5171	.5648	.6193	. 2838	.5925
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000 24.000 31.500 33.100 35.000 40.000 45.000 50.000 57.000 60.900 68.000	.0029 .0035 .0059 .0059 .0074	0007 .0005 .0002 0007 0019 0156 0182 0201	.0000	0001	0005		.0013				~.0165		0195 0134 0213	0207	
									•					·	

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DATE 20 API	P 76		TARUI ATE	n souer	E DATA -	1Hu								PAGE	351
DAIL LO AI	. 75		INDOCKIE		T 1059 (ALONE	ORRITE	R FUSELA	GE		(RO38	CE)		
MACU: (L)	_ 2	700 A	LPHA (2)		.000		riadina	•,							
MACH (1)			-					_					•		
SECTION (110RBIT	ER FUSEL	AGE		DEPENDE	NT VARIA	BLE CP/CP	'5							
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI 69.000 79.300 95.500 96.300 103.000 112.600 127.500 127.500 127.500 139.600 139.600 144.000	.0057	0232			0179 0174 0214 0219	.0461	0158	1261	.0253 .0857 .1283	.0112		0152 0170 0905		-,6140	0440
180.000		0084		-	0100								•		
X/LB	1.0250	1.0500													
РН! .000	0210	0219					÷	•							
MACH (2)	= 4.	.600 A	LPHA (1)	-5	.000 P	INF =	. 16595	Q(PS)	() = 2.4	591	RN/L	= 3.0100	CF	STG *	1.8033
SECTION (11CRB11	FER FUSEL	AGE		DEPENDE	NT VARIA	ABLE CP/CF	- \$							
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	1000	. 1250	.1500	. 1500	. 1650	.1700	. 1750	.1800
PHI .000 10.000 20.000 24.500	.9839	.3990	.1303	.0656		.0372	.0232	0112 0085 0078 0066		.0002					
39.000 163,000 174,000 180,000	.9839				.2877			0296	.2260	. 2534	. 6824	.7414	.8339	.3723	.8104
X/LB	.2000	.3000	.4000	5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI .000 23.000	0047	0077 0065	0088	0079	0127		0059				0200		0216	0217	

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PAGE	- 3	22	

(RQ3BCE)

ATE 20 APR 76 TABULATED SOURCE DATA - IH4

UPWT 1059 (IH4) O1 ALONE

ORBITER FUSELAGE

ACU (2) - U COO ALDUA (1) - -5 000

SECTION	(1)ORBIT	ER FUSELA	GE		DEPENDEN	T VARIA	BLE CF/CF	'S							
(/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.014
PHI															
24.000	0035														
31.500 33.100	0016			.: '			•		•						
33.100		0107													
35.000	0043	0177		•											
40.000	0062	0137 0152									* .				
40.000 45.000 50.000 51.600 57.000	.0063	-,0106													
51 600	.000												.0016		
57.000		0096													
60.900	1 1 N	0094										•			
60.900 65.000	•	0094													
68.000													0070		
69.000		0097				-									
79.300					0179										
95.500 95.700 96.300	* *				0181		0082								
95.700		0177													
96.300	.0109			•	0100										
103.000					0182										028
105.000 112.600			-		0179										
117.500					0175			•				0156		0174	
120.800	100								.0221						
127.900						.0616									
129,500								. 1224							
130.000 135.000		•							.0781	.0144		0168			
135.000		0181		•	0087							*			
139.600									. 1291						
144,000												.0043			
155.000	. 1521												-		
180.000	. 1679	.0019			.0082										
								-							
/LB	1.0250	1.0500				•									
DLIT											-				
PHI	0001														

(?)

DATE 20 API	? 75		TABULATE	ED SOURC	E DATA -	IH4	_							PAGE	353
•	· ·			UPW	T 1059 (IH4) 01	ALONE	ORBITE	R FUSELA	\GE		tRQ3	BCE)		
MACH (2)	= 4,	600 AL	.PHA (2) = .	.000 P	INF =	. 16595	Q(PSI) = 2.4	581	RN/L	= 3.010	o CP	STG =	1.8033
SECTION (1)ORBIT	ER FUSELA	GE ·		DEPENDE	NT VARIA	BLE CP.CF	·s							
X/LB	.0000	.0050	.0200	.0400	.0500	.0500	.0806	.1000	. 1250	.1500	.1600	. 1650	.1700	.1750	.1800
PHI .000 10.000 20.000 24.500 39.000	.9911	.4824	.1809	-1001		.0647	.0430	.0296 .0259 .0240 .0225		.0136					•.
163.000 174.000 180.000	.9911				.2122			.1585	. 1545	. 1749	.4950	.5536	.6357	.2744	.6310
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9530	.9750	1.0000	1.0145
PHI .000 23.000	.0050	0006 0009	.0017		0017	******	.0005	,			0152		0176	0172	
24.000 31.500 33.100	.0047 .0073	.0009													
35.000 40.000 45.000 50.000	.0065	0006 0013		-											
51.600 57.000 60.900 65.000		0083 0105 0121											~.0140 _		
68.000 69.000 79.300 95.500		0123			0142 0143		0134						0174	• •	
95.700 96.300 103.000	.0096	0129	•		0175		0154								6200
105.000 112.600 117.500 120.800				•	0180		٠	-	.0226			0140		0149	0288
127.900 129.500 130.000	• .	0.00				.0226		.1100	.0775	.0140		0137			
135.000 139.600 144.000 155.000	. 1063	0175			0177				-1171			.0017			
180.000	.1181	0025			0087										

PAGE 354

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

UPWT 1059 (IH4) O1 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0189 -.0198

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(4)
```

```
PAGE 355
DATE 20 APR 76
                         TABULATED SOURCE DATA - 1H4
                                                                                                              ( 15 APR 76 )
                                                                   ORB. UPPER WING
                                                                                                   (RQ3UCE)
                                      UPWT 1059 (IH4) 01 ALONE
             REFERENCE DATA
                                                                                               PARAMETRIC DATA
                                                                                                                       5.000
SREF = 2690.0000 SQ.FT.
                           XMRP
                                        .0000 INCHES
                                                                                      RN/L
                                                                                                  3.000
                                                                                                          BETA
LREF = 1290.3000 INCHES
                           YMRP
                                        .0000 INCHES
BREF = 1290.3000 INCHES
                           ZMRP
                                        ,0000 INCHES
SCALE =
             .0100
                                                                                                             CPSTG = 1.7839
                                                                    Q(PSI) = 3.1531
                                                                                        RN/L = 3.0000
MACH (1) = 3.700
                        ALPHA ( [) =
                                      -5.000 PINF
                                                     = .32905
SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/C°S
EY/BW
            .4000
                   .6000
                           .8000
 X/CH
    .050
           .2009
    .200
           .0523
                   .0882
                           .1860
    .600
          -.0206 -.0170
   .800
                  -.0239
   .900
                  .0525
                           .0035
    .950
                  -.0161
                                                                                                             CPSTG # 1.7839
                                                                    Q(PSI) = 3.1531
                                                                                        RN/L = 3.0000
MACH { 1) =
               3.700
                        ALPHA ( 2) =
                                               PINF
                                                         .32905
SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CFS
SA\BM
           .4000
                   .6000
                           .8000
 X/CW-
   .050
           .1647
    .200
           .0281
                   .0612
                           .1309
          -.0302 -.0230
   .600
    .800
                  -.0305
    .900
                   .0558
                          -.0094
    .950
                  -.0214
                                                                                                             CPSTG = 1.8033
MACH (2) =
               4.600
                                                                    Q(PSI) = 2.4581
                                                                                         RN/L
                                                                                               = 3.0100
                        ALPHA(1) =
                                       -5.000 PINF
                                                     = .16595
SECTION ( 1) ORB. UPPER WING
                                          DEPENDENT VARIABLE CP/CPS
SA/BM
            .4000
                   .6000
                           .8000
 X/CW
    .050
           .1955
    .200
           .0583
                   .1033
                           .1757
          -.0153
    .600
                  -.0017
    .800
                  -.0109
                           .0147
    .900
                   .0464
    .950
                  -.0018
```

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 356

CPSTG = 1.8033

UPWT 1059 (IH4) O1 ALONE

ORB. UPPER WING

(RQ3UCE)

MACH (2! = 4.600 ALPHA (2) = .000 PINF Q(PSI) = 2.4581 = 3.0100

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

SANBM .4000 .6000 .8000

X/CM

.1591 .0263 .0669 -.0200 -.0137 -.0178 .0494 -.0068 .050 .200 .600 .800 .900

.1020

.0375

.004

0905

0362

```
UPWT 1059 (1H4) 01 ALONE
                                                                          ORB. LOWER WING
                                                                                                             (RQ3LCE)
MACH (1) =
                 3.700
                           ALPHA (2) =
 SECTION ( 1) ORB. LOWER WING
                                              DEPENDENT VARIABLE CP/CPS
SA/BM
             .2500
                     .3011
                              .3480
                                       .4000
                                                        .6000
                                                                .7500
                                                                         .8500
                                                                                  .9500
                                                                                          .9980
                                               .5000
  X/CW
    .025
                                       .0300
                                               .0426
                                                                 .0453
    .045
                                       .0312
    .100
                                                        .0216
                                                                         .0390
                                                                                 .0441
    .153
             .0005
                                               .0028
    .200
.299
                                       .0013
           -.0015
                                       .0045
                                                                 .0244
    .428
                                                        .0124
    444
             .0019
    .487
                                               .0149
    .559
                                       .0119
                                                       .0082
-.0037
    .600
    .700
    .736
             .0060
    .800
                                                      -.0143
    .850
                                                       -.0209
    .900
                                     -.0210
                                                                                 -.0235
                                                       -.0261
                                                               -.0245
MACH (2) =
                                                                                                                        CP5TG = 1.8033
                 4.600
                           ALPHA ( 1) = -5.000
                                                    PINE
                                                           .16595
                                                                           Q(PSI) = 2.4581
                                                                                                            3.0100
 SECTION ( 1) ORB. LOWER WING
                                              DEPENDENT VARIABLE CP/CPS
SA/BM
                     .30!1
                                       .4000
                                                                 .7500
                                                                         .3500
                                                                                          .9980
                              .3480
                                               .5000
                                                        .6000
                                                                                  .9500
  X/CM
                                                        .2106
    .000
                                                                         .3100
                                                                                         -.0054
    .001
                                                                 .2357
                    -.0160 -.0171
                                               .1167
                                                       .0191
                                                                         . 7277
    .002
                                                       -.0005
                                                                         . 3094
    .003
                                                        .3555
                                                                         .4148
                                                        .0589
                                                                         .0571
     .005
                                                                         .0145
     .025
                                     -.0163
                                               .0025
                                                                 .0198
    .045
                                     -.0156
    .100
                                                        .0012
                                                                         .0142
                                                                                  .0202
    .153
            -.0137
    .205
.299
.206
                                     -.0173
            -.0165
                                     -.0169
                                                                -.0030
    .428
                                                       -.0133
    .444
            -.0103
     .487
                                              -.0145
     .559
                                      -.0143
     .600
                                                       -.0164
```

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•••
•••
```

```
PAGE 359
DATE 20 APR 76
                           TABULATED SOURCE DATA - IH4
                                                                                                             (RQ3LCE)
                                         UPWT 1059 ([H4) 01 ALONE
                                                                          ORB. LOWER WING
MACH (2) =
                 4.600
                          ALPHA ( !) = -5.000
                                              DEPENDENT VARIABLE CF/CPS
 SECTION ( 1) ORB. LOWER WING
                                                                                          .9980
                                                        .6000
                                                                         .8500
                                                                                  .9500
SA/BM
                              .3480
                                      .4000
                                               .5000
                                                                .7500
  X/CW
    700
                                                      -.0181
    .736
           -.0092
                                                      -.0198
    .800
                                                       -.0213
    .850
    ,900
                                     -.0221
                                                      -.0217 -.0213
                                                                                -.0196
                                                                                                                        CPSTG = 1.8033
                                                                           Q(PS1) = 2.4581
                                                                                                         = 3.0100
MACH (2) =
                 4.600
                           ALPHA ( 2) =
                                             .000
                                                    PINF
                                                          = .16595
 SECTION ( 1) ORB. LOWER WING
                                              DEPENDENT VARIABLE CP/CPS
                                                                                  .9500
                                                                                          .9980
SA/BM
                                      .4000
                                               .5000
                                                        .6000
                                                                .7500
                                                                         .8500
                     .3011
                              .3480
  X/CM
                                                                         .3200
.0671
                                                                                         -.00B4
                                                        .2657
    .000
                                                        .0583
    .001
                    -.0024
                            -.0020
                                               .1775
                                                                .2773
                                                                         .0424
    .002
                                                        .0274
                                                                         .3554
.1060
    .003
                                                        .3392
     .004
                                                        .1064
    .005
.025
.045
                                                                         .0481
                                                        .0393
                                                                .0572
                                       .0218
                                               .0449
                                       .0222
    .100
                                                        .0261
                                                                         .0468
                                                                                  .0501
     . 153
             .0006
                                               .0054
     .177
                                       .0022
     .200
    .202
            -.0005
                                       .0039
                                                                 .0263
     .428
                                                        .0138
     .444
             .0000
                                                .0105
     .487
     .559
                                       .0083
                                                       .0081
-.0045
     .600
    .700
.736
             .0034
     .800
                                                       -.0130
                                                       -.0171
     .850
     .900
                                      -.0182
                                                       -.0197 -.0176
                                                                                -.0140
```

PAGE 360

DATE CO ALL TO	ED BOONGE DATA - THE			1,400
	UPWT 1059 (1H4) 01 ALONE	ORB. VERT. TAIL	(RQ3VC	E) (15 APR 76)
REFERENCE DATA		•	PARAMETRIC	: DATA
SREF = 2690.0000 SQ.FT. XMRP LREF = 1290.3000 INCHES YMRP BREF = 1290.3000 INCHES ZMRP SCALE = .0100	= .0000 INCHES		RN/L = 3.000	BETA = 5.000
MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32905	Q(PSI) = 3.1531	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS			. :
Z/8V .2990 .5320 .7650	.9050			
X/CV .000 .4012 .4436 .3308 .300 .0234 .0185 .0195 .500 .0147 .7000234 .900 ~.018802090144	. 5022			
MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32905	Q(PSI) = 3.1531	RN/L = 3.0000	CPSTG = 1.7839
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/CPS			
Z/BV .2990 .5320 .7650	.9050			
X/CV .000 .3682 .3145 .2386 .300 .00040036 .0003 .5000068 .700031202800221	.3715		•	
MACH (2) = 4.600 ALPHA (1	= -5.000 PINF = .16595	Q(PSI) = 2.4581	RN/L = 3.0100	CPSTG = 1.8033
SECTION (1) ORB. VERT. TAIL	DEPENDENT VARIABLE CP/OPS	j		
Z/BV .2990 .5320 .7650	.9050		· · · · · · · · · · · · · · · · · · ·	
X/CV .000 .3620 .4387 .3497 .300 .0213 .0211 .0219 .500 .0158 .7000124 .900006600970056	.5362			

(4)

PAGE 361 TABULATED SOURCE DATA - 1H4 DATE 20 APR 76 ORB. VERT. TAIL (RO3VCE) UPWT 1059 (IH4) OI ALONE MACH (2) = = 3.0100 CPSTG = 1.8033.000 Q(PSI) = 2.4581ALPHA (2) = SECTION (DORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS .5320 .2990 .7650 Z/BV .9050 X/CV .000 .300 .500 .700 .3358 .2851 .2296 .0012 -.0007 .0016 -.0043 -.0206 -.0155 .3750

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PAGE 36

				UPW	T 1059 (IH4) T15	ALONE	EXTER	NAL TANK			(RQ3	TDA) (15 APR	76)
	REFER	RENCE DAT	TA									PARAMETR	IC DATA		
LREF = 1	690.0000 290.3000 290.3000 .0100	INCHES	XMRP YMRP ZMRP	= .	0000 INC 0000 INC 0000 INC	HES				RN	1/L = ·	1.200	BETA	=	,000
MACH (I)	= 3.1	700 AL	_PHA (1) = -5	.000 P	INF =	.13185	QCPS	1) = 1.	2633	RN/L	= 1.200	O CP	STG =	1.7839
SECTION (1)EXTER	NAL TANK			DEPENDE	NT VARIA	BLE CP/C	PS							
X/LT	.0000	.0050	.0100	.0400	.0000	. 1500	2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000				.2646	. 1438	.0218	0083	0140	0143 0095	.0038 0145 0092	0148 0100 0047		0140 0148 0095 0036	0020	0113 0220 0169 0151 0092 004 .0110
167.000 180.000 197.000 210.000 220.000 225.000 232.000	.9803	.7772	.7454	.4255	.2841 .2792	.0940 .1030 .0986	.0282	0037		0052 0058		.0024	0055	0016	.0092 .0012 .00134 0190
X/LT	.4250	.4500	.4750	.5000	.5250	,5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000		0148 0092		0159 0156 0116	·	0164 0124		0172 0188 .0042 0159 0061	0131 0092	0146 0056 0100	0133 0105 0115	0021 0206 0144 0152 0087	0149 0126 0149	0162	0215 0128 0133 0056
135.000 157.500 161.000	.0030	0047 0150	0169	0063 0117		0031 0184		0023 0021	0043 0074	0064 0057	0053 0066	0059 0066	.0207 0068		0066 .0382
166.000 180.000 197.000 210.000 220.000 232.000	.0196	. 1282	0040	0147 0224 .0006	0074	÷.0055	0107	0021 0010 0098	0046	0013 0074 0024 0012	0024	0049 0043 0154	0016		.0271 .0313
X/LT	.9250	.9350	.9370	.9750											
THETA 123.000	.0169														

(-/-

PAGE 363

DATE 20 APR 76 3.700 X/LT .935D THETA 151.000 .0843 180.000

TABULATED SOURCE DATA - IH4

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK (RQ3TDA)

ALPHA (1) = -5.000SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CPS .9370 .9750 .0849 -.0350210.000 .1360 3.700 MACH (1) = ALPHA (2) = .000 - PINF .13165 Q(PSI) = 1.2633RN/L 1.2000 = 1.7839 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CP! X/LT .0000 .0050 .0100 .0400 .3000 .3250 .3350 .3500 .3750 .4000 .0800 .1500 .2000 .2500 .2750 THETA .000 .3436 .2057 .0466 -.0032 45.000 -.0142 67.500 -.0134 -.0113 .0055 90.000 -.0111 -.0142 -.0148 -.0148 **-.**0150 -,0140 -.0134 112.500 -.0140 -.0137 -.0142 -.0126 -.0118135.000 -.0097 -.0086 -.0129 -.0118 157.500 .0045 167.000 -.0135180.000 .9799 .6862 -.0114 .7165 .3333 .2140 .0546 .0058 -.0206 -.0218 -.0178 -.0141 197.000 -.0209 .2131 .0647 210.000 .0634 -.0157 220.000 -.0181 225.000 -.0114 232.000 -.0163 X/LT .4250 .4500 .9000 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .8000 .8500 .8750 THETA .000 -.0113 .0022 45.000 -.0121 -.0118 -.0118 67.500 -.0076 -.0126 .0074 -.0084 -.0099 -.0087 -.0094 90.000 -.0056 -.0129 -.0126 -.0126 -.0105 -.0001 -.0045 -.0092 -.0068 112.500 -.0113 -.0118 ~.0045 -.0081 -.0050 -.0079-.0017 -.0118 -.0089 -.0084 123.000 -.0068 -.0066 .0058 135.000 157.500 -.0110 -.0113 -.0108 -.0063 -.0074 -.0089 -.0081 -.0079 .0107 -.0063 -.0148 -.0221 -.0233 -.0209-.0233 -.0027 -.0082 -.0046 -.0057 -.0046 -.0057 .0270 161.000 -.0230 166.000 -.0252 -.0051 180.008 -.0056 .0721 -.0089 -.0297 -.0193 -.0215 -.0065 -.0090 -.0084 -.0060 -.0071 -.0032 .0221 -.0169 197.000 -.0163 -.0057 .0232 210.000 -.0043 -.0073 220.000 .0073 -.0005 232.000 -.0029 -.0084

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK (RQ3TDA) MACH (1) =3.700 ALPHA (2) = SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0239 151.000 .0961 180.000 .0735 -.0307 210.000 .1084 MACH (2) =4.600 ALPHA(1) = -5.000PINF = .66200-01 Q(PSI) = .98085 RN/L 1.2000 CPSTG = 1.8033SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .3250 .3350 .3500 .3750 .4000 .0100 .0400 .0800 .1500 2500 .2750 .3000 THETA .000 -.0047 ,2476 .1373 .0206 45.000 -.0196 67.500 .0222 -.0022 -.0073 90.000 -.0061 - 0042 -.0049 -.0049 -.0059 -.0059 -.0066 112.500 -.0022 -.0015 ~.0012 -.0019 -.0019 135.000 .0042 .0018 .0025 .0032 157.500 .0233 167.000 1000. -180.000 .9485 .7488 -.0032 .0022 .7208 .3851 . 2628 .0873 .0318 -.0044 -.0059 -.0059 197.000 .2565 .0971 -.0063 210.000 -.0028 .0919 220.000 -.0040 225.000 .0003 232.000 -.0137 X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 ,6500 .7000 .7500 .8000 .8500 .8750 .9000 THETA .000 -.0027.0041 45.000 67.500 -:0158 -.0182 -.0169 -.0080 . 0207 -.0046 -.0069 -.0063 -.0069 -.0053 90.000 - .0065 -.0073 -.0087 .0056 -.0010 -.0063 -.0053 -.0046 -.0066 112.500 -.0022 -.0036 -.0039 -.0026 .0006 -.0040 .0052 .0033 -.0026-.0017 123.000 -.0003 .0151 135.000 -.0007 .0015 .0006 -.0002 .0010 .0144 .0005 .0036 .0016 157.500 .0007 -.0102 -.0129 .0121 -.0051 -.0026 -.0048 -.0048 .0207 -.0102 -.0153 -.0048 161.000 -.0149 166.000 -.0106 -.0019 180.000 .0050 .0906 .0073 -.0188 -.0118 -.0075 -.0098 -.0023 -.0044 -.0069 -.0026 -.0044 .0002 .0185 197.000 -.0032 -.0019 .0193 210.000 .0002 -.0041 220.000 .0209 .0031 232,000 -.0059-.0120

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DATE 20 APR 76
                            TABULATED SOURCE DATA - 1H4
                                                                                                                             PAGE 365
                                         UPWT 1059 (IH4) T15 ALONE
                                                                                                             (RQ3TDA)
                                                                          EXTERNAL TANK
MACH (2) =
                 4.600
                          ALPHA ( 1) =
                                         -5.000
 SECTION ( I)EXTERNAL TANK
                                             DEPENDENT VARIABLE CP/CPS
X/LT
                     .9350
                                      ,9750
                              .9370
  THETA
 123.000
             .0115
 151.000
                     .0763
 180.000
                              .0509
                                    -.0201
 210.000
                              .1194
MACH (2) =
                 4.600
                          ALPHA (2) =
                                                               .66200-01
                                                                          Q(PS1) =
                                                                                     .98085
                                                                                                 RN/L
                                                                                                           1.2000
                                                                                                                        CPSTG
                                                                                                                                  1.8033
 SECTION ( 1) EXTERNAL TANK
                                              DEPENDENT VARIABLE CP/CPS
X/LT
             .0000
                     .0050
                              .0100
                                      .0400
                                               .0800
                                                        .1500
                                                                .2000
                                                                         . 2500
                                                                                 .2750
                                                                                          .3000
                                                                                                   .3250
                                                                                                           .3350
                                                                                                                    .3500
                                                                                                                            .3750
                                                                                                                                     .4000
  THETA
 .000
45.000
                                      .3352
                                               .2010
                                                        .0585
                                                                                                                                    .0120
                                                                                                                                   -.0031
 67.500
                                                                                          .0233
                                                                                                                   -.0015
                                                                                                                                   -.0059
  90,000
                                                                .0058
                                                                               -.0055
                                                                                                                  -.0066
                                                                                                                                   -.0069
                                                                       -. 1052
                                                                                       -.0059
                                                                                                 -.0066
 112.500
                                                                                -.0049
                                                                                        -.0049
                                                                                                 -.0052
                                                                                                                  -.0049
                                                                                                                                    -.0049
 135.000
                                                                                                                           -.0028
                                                                                                 -.0042
                                                                                                                   -.0038
                                                                                                                                   -.0021
 157.500
                                                                                                                                    .0227
 167.000
                                                                                                                                    -.0128
 180,000
             .9926
                      6905
                                      .3079
                                               .2010
                                                        .0511
                                                                .0136
                                                                                        -.0171
                                                                                                                   -.0159 -.0140
                                                                                                                                   -.0109
 197,000
                                                        .0516
                                                                                         -.0167
                                               .1994
 210.000
                                                        .0583
                                                                                                                                    -.0140
 220.000
                                                                                                                                   -.0144
 225.000
                                                                                                          -.0093
 232.000
                                                                                                                                    -.0156
X/LT
             .4250
                      .4500
                              .4750
                                      .5000
                                               .5250
                                                        .5500
                                                                                                                    .8500
                                                                                                                                     .9000
                                                                .5750
                                                                         .6000
                                                                                 .6500
                                                                                          .7000
                                                                                                   .7500
                                                                                                           .8000
                                                                                                                             .9750
  THETA
    .000
                                                                                                           .0173
                                                                       -.0018
  45.000
                                                                       -.0028
                                                                                                          -.0061
                                                                                                                                    -,0071
  67.500
                                                                                                         -.0058
                                                                                                                                    -.0035
                                     -.0069
                                                                         .0215
                                                                                -.0032
                                                                                        -.0062
                                                                                                 -.0049
                                                                                                  .0014
  90.000
                    -.0066
                                     -.0069
                                                      -.0076
                                                                                          .0080
                                                                                                          -.0045
                                                                                                                   -.0029
                                                                                                                                    -.0019
                                                                       -.:1055
 112.500
                    -.0042
                                                                                                                                     .0057
                                     -.0052
                                                      -.0055
                                                                                         -.0025
                                                                                                                  -.0029
                                                                         .11027
                                                                                -.0032
                                                                                                 -.0032
                                                                                                           .0011
 123.000
                                                                                                                    .0024
                                                                                                                           -.0019
                                                                                                                                    .0146
 135.000
                    -.0035
                                                                                                -.0022
                                     -.0038
                                                      -.0035
                                                                       -.11002
                                                                               -.0009
                                                                                        -.0025
                                                                                                         -.0022
                                                                                                                    .0037
                                                                                                                                    -.0006
 157.500
            -.0101
                    -.0175
                            -.0202
                                                                                                                                    -.0011
                                     -.0171
                                                      -.0202
                                                                         .11172
                                                                               -.0187
                                                                                        -.0162
                                                                                                 -.0180
                                                                                                         -.0180
                                                                                                                  -.0187
 161.000
            -.0199
 166,000
                                     -.0195
                                                                                         -.0169
 180.000
            -.0093
                      .0333
                                                                                        -.0202
                                                                                                         -.0198
                                                                                                                  -.0151
                                                                                                                                    -.0025
                            -.0050
                                     -,0226
                                              -.0159
                                                     -.0159 -.0183
                                                                       -.0180
                                                                                -.0205
                                                                                                 -.0187
 197.000
                                     -.0:52
                                                                                         -.0173
                                                                                                                                    -.0018
 210.000
                                                                       -.11173
                                                                                                          -.0202
 220.000
                                       .0161
                                                                                         -.0144
 232.000
                                                                       -.0169
                                                                                                          -.0216
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TABULATED SOURCE DATA - IH4

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK

(ROSTDA)

PAGE 366

MAC = (2) = 4.800ALPHA (2) = .000

SECTION (I) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350

.0596

THETA 123.000 .0103 151.000 180.000 210.000

.0234 -.0395 .0597

1059 (1H4) T15 ALONE EXTERNAL TANK (ROSTDB) (15 APR 76

				UPWI	1059 (IH4) T15	A_ONE	EXTER	NAL TANK	•		(RQ3	TDB) (15 APR	76)
	REFE	RENCE DAT	Α									PARAMETR	IC DATA		
LREF =	2690.0000 1290.3000 1290.3000 .0100	INCHES	YMRP	≖ .[0000 INC 1000 INC	HES				RN	/L =	3.000	BETA	£	.000
MACH (I) = 3.	700 AL	PHA (1) = -10.	000 P	inf =	. 32890	Q(PS	1) = 3.	1518	RN/L	= 3.000	O CP	STG =	1.7839
SECTION	(1)EXTER	NAL TANK			DEPENDE	NT VARIA	BLE CP/C	PS							
X/LT	.0000	.0050	.0100	.0400	.0800	.1500	5000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000 157.500				. 1958	.0922	0001	0846	0170	0168 0039	0219 0176 0030	0182 0045 .0104		0295 0196 0051 .0109	.0103	0237 0305 0310 0212 0067 .0094 .0292
197.000 197.000 210.000 220.000 225.000 232.000	.9684	.8534	.7465	.5376	,3566 ,3476	.1438 .1613 .1516	0620	.0326		.0324 .0301		.0175	.0306	.0295	.0340 .0338 .0328
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	. 5750	.6000	.6500	.7008	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000 135.000 157.500	.0472 .0000	0224 0070 .0104 .0153	.0031	0316 0246 0105 .0081		0267 0094 .0069		0143 0303 0260 0268 0122	0322 0151 .0026 .0119	0341 0256 0154 .0026	0346 0303 0157 .0035 .0108	0117 0302 0343 0325 0159 .0031	0324 0192 0244 .0474 .0092	0159	0304 0308 0331 0078 .0036 0035
166.000 180.000 197.000 210.000 220.000 232.000	.0876	.1256	.0001	.0016 0034 .0284 .0348	.0338	.0233	.0198	.0257 .0224 0154	.0219	.0246 .0161 .0191	.0211	.0197 .0194 0172	\$150.		.0827 .0925
X/LT	.9250	.9350	.9370	.9750											
THETA 123.000	.0154	-									÷	•			

220.000

232.000

.0150

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK (RQ3TDB) MACH (1) = 3.700 ALPHA(1) = -10.000SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 151.000 .1044 180.000 .1266 -.0367 210.000 .1665 MACH (1) = .32890 CPSTG = 1.7839 3.700 ALPHA (2) =-5.000 PINE Q(PSI) = 3.1518RN/L = 3.0000 SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0100 .3000 .4000 .0000 .0050 .0400 .0800 .2500 .3250 .3350 .3500 .3750 .1500 000S .2750 THETA .000 -.0152 .2646 .1414 .0225 45.000 -.0203 67.500 -.0200 -.0205 -.0152 90.000 -.0023 -.0152 -.0153 -.0154 -.0159 -.0157 -.0163 112.500 -.0089 -.0084 -.0091 -.0085 -.0096 135.000 -.0030 -.0024 -.0012 .0033 157.500 .0141 167.000 .0214 180.000 .7792 .7413 .4389 .2822 .0954 . 0289 .0056 .0050 .0050 .0049 .0151 197.000 .1120 .2780 .0048 210.000 .0146 .1074 220.000 .0058 225.000 .0018 232.000 -.0136 X/LT .9000 .4250 .4500 .4750 .5000 .8500 .8750 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 THETA .000 -.0148 -.0054 45.000 -.0197 -.0130 -.0191 67.500 -.0186 -.0195 -.0156-.0200 -.0204 -.0190 -.0199 90.000 -.0154-.0195 -.0203 -.0175 -.0188 -.0193 -.0144 -.0179 -.0199 112.500 -.0091 -.0134 -.0126 -.0149 -.0149 -.0097 -.0115 -.0133 -.0137 -.0137 123.000 -.0194 -.0103 -.0247 135.000 -.0055 -.0043 -.0009 -.0043 -.0059 -.0058 -.0062 -.0060 .0276 -.0130 157.500 .0210 -.0048 -.0069 .0049 -.0112 ,0189 -.0018 -.0020 -.0021 -.0032 -.0024 .0496 161.000 -.0187 166.000 -.0085 .0039 .0365 180.000 .0946 -.0066 -.0204 .0046 -.0011 S100. .0464 .0095 .0046 -.0017 .0016 8100. .0007 197.000 .0145 .0005 .0544 210.000 .0037 .0022

-.0069

.0009

232.000

TABULATED SOURCE DATA - IH4

(RQ3TDB) UPWT 1059 (IH4) T15 ALONE EXTERNAL TANK MAC= (1) = 3.700 ALPHA (2) = -5.000SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0291 151.000 .0841 180,000 .0925 -.0398 210.000 .1085 CPSTG = 1.7839 3.0000 MACH (1) =3.700 ALPHA (3) =PINF .32890 Q(PSI) = 3.1518RN/L .000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 X/LT .0050 .0100 .0400 .0800 . 2000 .2500 .2750 .3000 .3250 .3350 .3500 .1500 THETA -.0078 .000 .3414 .2006 .0514 -.0079 45.000 -.0131 67,500 -.0095 -.0131 -.0128 90.000 -.0030 -.0140 +.0144 -.0141 -.0143 -.0130-.0117 -.0124 112.500 -.0136 -.0136 -.0139 -.0099 135.000 -.0125-.0:21 -.0074 -.0041 157.500 167.000 -.0057 180.000 .9811 .0566 .0043 -.0143 -.0143 -.0134 -.0099 -.0026 .6694 .7125 .3389 .2136 .0676 197,000 .2137 -.0140 -.0056 210.000 .0667 -.0099 220.000 225.000 -.0041 -.0053 232.000 .8500 .8750 .9000 X/LT .7000 .7500 .8000 .4250 .4500 .4750 .5000 .5250 .5500 . 5750 .6000 .6500 THETA -.0075 -.0077 .000 -.0096 -.0098 45.000 -.0111 -.0070 67.500 -.0115 -.0060 -.0090 -.0084 -.0079 -.0077 -.0062 90.000 -.0107 -.0051 -.0066 -.0070 -.0067 -.0112 -.0094 -.0111 -.0063 112.500 -.0106 -.0102 -.0075 -.0073 -.0075 -.0079 -.0076 -.0063 -.0147 -.0060 -.0066 123.000 -.0134 135.000 -.0108-.0107 -.0086 -.0064 -.0090 -.0088 -.0082 -.0077 .0145 .0292 -.0130 -.0152 -.0130 -.0111 157.500 -.0142 -.0129 -.0164 ~.0106 -.0187 -.0122 -.0141 161.000 -.0182 166.000 -.0175 -.0123 .0274 -.0304 -.0105 -.0159 ~.0141 -.0165 -.0149 -.0133 -.0130 -.0114 180.000 .0484 -.0150 .0259 197,000 -.0016 -.0140 210.000 -.0118 220.000 -.0019 -.0100 -.0103 -.0138

PAGE 369

232.000

-.0171

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK (RQ3TDB) MACH (1) =3.700 ALPHA (3) =SECTION (DEXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0219 151.000 .0673 180.000 .0604 -.0467 210.000 .0933 3.700 Q(PS1) = 3.4518CPSTG = 1.7839MACH (1) =ALPHA (4) = .32890 RN/L = 3.0000 5.000 PINE SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS .3750 .4000 .2750 .3000 .3500 X/LT .0400 .2500 .3250 .3350 .0000 .0050 .0100 .0800 .1500 .3000 THETA .0060 .000 .4274 .2706 .0917 -.0050 45.000 67.500 -.0053 -.0098 -.0105 -.0158 -.015790.000 -. 0031 -.0147 -.0155 -.0154 -.0160 -.0180 112.500 -.0194 -.0196 - 0201 -.0187-.0175 -.0163 135.000 -.0209 -.0195 -.0155 157.500 -.8197167.000 .1502 -.0277 -.0234 -.0214 -.0164 180.000 .9816 .6128 .5409 .2453 .0261 -.0129 -.0277 197.000 .1569 .0347 -.0270 -.0191 210.000 .0376 -.0236 220.000 -.0177 225.000 232.000 -.0147 .9000 X/LT 4250 .4500 .4750 .5000 .5500 .3750 .6000 .6500 .7000 .7500 .8000 .6500 .8750 .5250 THETA .0014 .000 .0064 -.0097 45.000 -.0075 -.0087 -.0130 67.500 **~.0085** -.0123 -.0125 -.0125 -.0129 -.0114-.0158 -.0157 -.0141 -.0151 -.0147 -.0147 90.000 -.0159 -.0152 -.0117 -.0148 -.0155 -.0119 112.500 -.0169 -.0156 -.013B -.0142 -.0142 -.0144 -.0160 -.0165 -.0093 123,000 -.0160 -.0011 .0002 135.000 -.0158 -.0142 -.0142 -.0130 -.0153 -.0149-.0119 -.0137157.500 -.0208 -.0170 -.0191 -.0155 -.0127 -.0159 -.0151 -.0141 -.0125 -.0096 .0256 -.0185 161.000 -.0196 166.000 -.0265 -.0142.0077 -.0165 -.0185 .0195 180.000 .0004 -.0267 -.0310 -.0201 -.0217 -.0202 -.0153 -.0140 -.0144 -.0113 .0166 197.000 ~.0209 -.0167210.000 -.0199 -.0166220.000 -.0127 -.0144

TABULATED SOURCE DATA - IH4

EXTERNAL TANK

(RQ3TDB)

PAGE 371

UPWT 1059 (IH4) T15 ALDNE SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 151.000 180.000 210.000 .0046 .0553 .0512 -.0426 .0788

MACH (2)	= 4.	600 AL	.PHA (1) = -10.	000 P	INF =	. 16520	Q(PS	[] = 2.	4476	RN/L	× 2.995	O CP	STG =	1.8033
SECTION (1)EXTER	NAL TANK			DEPENDE	NT VARIA	BLE CP/C	PS							
X/LT	.0000	.0050	.0100	.0400 ·	.0800	.1500	.8'000	.2500	.2750	.3000	.3250	. 3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500 135.000 157.500 167.000				. 1756	.0818	.0013	0007	0092	0091 .0003	0072 0098 .0010	0104 0001 .0110	·	0172 0115 0007 .0115		0156 0229 0193 0126 0016 .0133 .0322
180.000 197.000 210.000 220.000	.8974	.7803	.7103	.4815	.3257 .3152	. 1290 . 1447 . 1357	.(561	.0276		.0254 .0237			.0239	.0228	.0322
225.000 232.000												.0189			0042
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.1.750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 57.500 90.000 112.500 123.000		0129 0018		0202 0148 0058		0167 0054		0154 0226 0097 0178 0034	0188 0065	0198 0115 0076	0192 0164 0080	0087 0241 0199 0190 0076	0190 0103 0101	0872	0256 0190 0189 0001
135.000 157.500 161.000	.6398 .0028	.0081 .0131	.0058	.0081 .0166		.0098 .0027		.0070 .0392	.0053 .0116	.0049 8110.	.0057 .0108	.0056 .0092	.0365 .0105		.0027 .0551
165.000 180.000 197.000 210.000 220.000	.0593	. 1231	.0137	.0114 0001 .0309 .0279	.0230	.0236	.0158	2550. 2600	.0194	.0210 .0139 .0179	.0191	.0179 .0169 0094	.0181		.0529 .0709
ແລະ.ບບບ								0066				0094			

232.000

.0156

UPWT 1059 (1H4) T15 ALCNE (ROSTOB) EXTERNAL TANK MACH (2) = 4.600 ALPHA (1) = -10.000SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0177 151.000 .0918 180.000 .1067 -.0213 210.000 .1471 $MACH_{(2)} =$ 4.600 ALPHA (2) == 1.8033 -5.000 PINE . 16520 Q(PSI) = 2.44762.9950 CPSTG RN/L SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000 THETA .000 .2554 .13B7 .0254 -.0084 45.000 -.0138 67.500 -.0039 -.0119 -.013490.000 .0022 -.0084 -.0085 -.0089 -.0091 -.0095 -.0100 112.500 -.0042 -.0037 -.0046 -.0046 -.0043 135.000 .0002 .0006 .0017 .0097 157.500 .0142 167.000 .0134 180.000 .0036 .9701 .7135 .7461 .4060 .2662 .0032 .0150 .0267 .0289 .0059 .0042 197.000 .2602 .1001 .0039 210.000 .0104 .0956 220,000 .0051 225.000 .0087 232.000 -.0072 X/LT. .4250 .9000 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 THETA .000 -.0112 -.0049 45.000 -.0154 -.0122 -.0144 67.500 -.0120 -.0126-.0138 -.0039 -.0132 -.0121 -.0137 90.000 -.0100 -.0114 -.0127 -.0129 -.0064 -.0099 -.0132 -.0121 -.0122 112.500 -.0050 -.0076 -.0088 -.0051 -.0061 -.0070 -.0082 -,0075 -.0092 -.0066 123.000 -.0125 -.0113 -.0005 135.000 -.0016 -.0028-.0029 -.0051 -.0003 .0015 -.0018 -.0031 -.0035 .0189 157.500 .0128 -. 7043 -.0051 .0015 -.0071 .0277 .0006 .0006 .0002 -.0007-.0005 .0346 161.000 -.0085 166.000 .0014 .0042 180.000 .0258 .0854 .0065 -.0135 .0004 .0042 -.0010 .0049 .0024 .0004 .0029 .0021 .0024 .0301 197.000 .0366 .0145 .0018 210.000 .0061 .0016 220.000

-.0023

.0046

232.000

PAGE 373 UPWT 1059 (IH4) TIS ALONE EXTERNAL TANK (RQ3TOB) MACH (2) = . 4.600 ALPHA (2) = -5.000SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT . 9250 .9350 .9370 .9750 THETA 123.000 .0145 151.000 .0694 180.000 .0639 -.0232210.000 .0949 MACH (2) =4.600 ALPHA (3) =CPSTG = 1.8033. 6520 Q(PSI) = 2.4476RN/L **2.9950** SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .3750 .4000 .0000 .0050 .0100 .0400 .0800 .1500 2000 .2500 .2750 .3000 .3250 .3350 .3500 THETA .000 .3453 -.0025 .2047 .0567 45.000 -.0086 67.500 -.0078 .0011 -.0065 90.000 -.0071 -.0073 -.0079 -.0068 -.0076 -.0078 112.500 -.0069 -.0078 -.0071 -.0067-.0072 135.000 -.0073 -.0068 -.0053 -.0044 157.500 -.0008 -.005B 167.000 180.000 -.0100 -.0072 -.0044 .9995 .6656 .6710 .3169 .2018 .0515 0081 -.0106 -.0119 197.000 .1999 .0613 -.0117 210.000 -.0078 .0611 220.000 -.0097 225.000 -.0050 232.000 -.0070 X/LT .4250 .4500 .9000 .4750 .5000 .5250 .5500 5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 THETA .000 -.0029 -.0080 45,000 $\pm .0107$ -.0088 -.0096 67.500 -.0063 -.0080 .0006 -.0062 -.0075 -.0063 -.0075 -.0076 90.000 -.0060 -.0078 -.0076 -.0071-.0017 -.0046 -.0071 -.005B 112.500 -.0065 -.0071 -.0072 -.0060 -.0059 -.0060 -.0050 -.0060 -.0038 -.0043 123.000 -.0054 -.0080 -.0004 135.000 -.0061 -.0068 -.0069 -.0038 -.0052 -.0062 -.0060 -.0063 .0062 -.0051 157.500 -.0092 -.0121 -.0128 -.0102 .0121 -.0143 -.0140 -.0143 .0128 -.0141 -.0142 -.0140 161.000 -.0128 -.0140 166.000 -.6103 180.000 .0039 .0511 -.0130 -.0099 - 0127 -.0129 -.0161 .0079 -.0263 -.0153 -.0146 -.0149 -.0135 197.000 .0085 -.0041 -.0153 210.000 -.0119-.0151 220.000 .0030 -,0097

-.0108

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK (RQ3TDB) MACY (2) = 4.600 ALPHA (3) =.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123,000 .0144 151.000 .0518 180.000 .0397 -.0335 210.000 .0681 MACH (2) =4.600 ALPHA (4) =CPSTG = 1.80335.000 .16520 Q(PSI) = 2.4476RN/L = 2.9950 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .3000 .3250 .3350 .3500 .3750 .4000 .2750 THETA .000 .4365 .2784 .0958 .0149 45.000 .0000 67,500 -.0030 -.0047 .0054 90.000 .0026 -.0067 -.0075 -.0079 -.0087 -.0090 -.0095 112.500 -.0113 -.0115 -.0120 -.0120 -.0120135.000 -.0115 -.0109 -.0131-.0124 157.500 -.0057 167.000 -.0157 180.000 .4985 1.0021 .6164 .2161 .1386 .0252 -.0049 -.0196 -.0199 -.0173 -.0163 -.0156 197.000 . 1447 .0321 -.0198 210.000 -.0163 .0340 220,000 -.0168 225.000 -.0142 232.000 -.0129 X/LT .4250 .4750 .4500 .9000 .5000 .5250 .5500 .5750 .6000 .8500 .7000 .7500 .8000 .8500 .8750 THETA .000 .0149 .0061 45.000 -.0082 -.0034 -.0068 67.500 -.0064 -.0001 -.0091 -.0090 -.0099 -.0095 -.0078 90.000 -.0104 -.0111 -.0117 -.0115 -.0086 -.0068 -.0103 -.0120 -.0102 112.500 -.0117 -.0057 -.0120 -.0121 -.0093 -.0112 -.0111 -.010B -.0087 -.0089 123.000 -.0054 -.0081 -.0032 135.000 -.0109 -.0111 -.0111 ~,0098 -.0103 -.0098 -.0095 -.0076 -.0069 -.0078 157.500 -.0146 -.0149 -.0160 .0019 -.0157 -.0088 -.0092 -.0163.0090 -.0096 -.0084 -.0078 161.000 -.0162 166.000 -.0179 -.0089 180.000 -.0101 -.0092 .0035 -.0182 -.0181 -.0168 -.0174 -.0181 -.0088 -.0107 -.0084 -.0081-.0089 -.0068 197,000 .0043 -.0177 -.0092 210.000 -.0103-.0112 220.000 -.0060 -.0084 232.000

-.0075

DATE 20 APR 76 TABULATED SOURCE DATA - IH4

UPWT 1059 (1H4) TI5 ALONE

(RQ3TDB) EXTERNAL TANK

PAGE 375

ALPHA (4) = 5.000

SECTION (I)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9370 .9750

-.0068

.0274

THETA 123.000 151.000 180.000 210.000

THETA 123.000

.0341

UPWT 1059 (1H4) TIS ALINE EXTERNAL TANK

(RQ3TDC) (15 APR 76)

REFERENCE DATA PARAMETRIC DATA .000 SREF = 2690.0000 SQ.FT. XMRP .0000 INCHES RN/L 5.000 BETA LREF = 1290.3000 INCHES YMRP .0000 INCHES ZMRP BREF = 1290.3000 INCHES .0000 INCHES SCALE = .0100 MACH [[] = 3.700 ALPHA(1) =RN/L = 4.9900 CPSTG = 1.7839-5.000 PINE .54715 Q(PSI) = 5.2436SECTION (I) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .3750 ,4000 .0000 .0050 .0100 .0400 .0800 .1500 .8000 .2500 .2750 .3000 .3250 .3350. .3500 THETA -.0170 .000 .2695 . 1438 .0235 45.000 -.0207 67.500 -.0187 -.0183-.0172 90.000 -.0143 -.7024 -.0145 -.0147 -.0143 -.0140 -.0135 -.0085 -.0076 -.0083 112.500 -.0077 -.0090 135.000 -.0015 -.0017 -.0024 -.0018 157.500 .0077 167.000 .0278 180.000 .7344 .0066 .0141 .9826 .7668 .4329 .2765 .0924 .0271 .0069 .0073 .0068 197.000 .2740 .1101 .0065 210,000 .1042 .0173 220.000 .0067 225.000 .0017 232.000 -.0121X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000 THETA -.0126 . 000 -.0868 45.000 -.0120 -.0110 -.0166 67.500 -.0180 -.0174 -.0171 -.0169 -.0164 -.0148 -.0154 90.000 -.0155 -.0177 -.0184 -.0184 -.0151 -.0155 -.0155-.0189 -.0159112.500 -.0095 -.0151-.0088 -.0096 -.0103 -.0120 -.0130 - .0134 -.0136 -.0139 123.000 -.0262 -.0169 -.0112 135.000 .0035 -.0030 -.0016 -.0057 -.0065 -.0058 -.0060 -.0064 .0254 -.0136 157.500 .0221 -.0031 ~.0042 .0074 -.0025 -.0028 -.0031 -.0042 -.0027 .0460 .0100 -.0102 -.0168 161.000 166.000 -.0061 .0017 180.000 .0416 .0819 ~.0071 .0573 -.0202.0140 .0036 -.0008 .0042 -.0002 .0006 -.0006 -.0004 -.0020 197.000 .0163 .0556 -.0006 210.000 .0025 .0019 220.000 .0092 -.0011 232.000 -.0063 -.0105 X/LT .9250 .9350 .9370 .9750

PAGE 377

DATE 20 APR 76 TABULATED SOURCE DATA - 1H4

UPWT 1059 (IH4) T15 AL(NE EXTERNAL TANK (F

(RQ3TDC)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA 151.000 .0616 180.000 .0857 -.0435 210.000 .1037

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .54715 Q(PSI) = 5.2436 RN/L = 4.9900 CPSTG = 1.783

SECTION (1)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2500 .2500 .2500 .3250 .3350 .3500 .3750 .40

X/LT	.0000	.0050	.0010.	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA .000 45.000 67.500 90.000 112.500				.3457	.2034	. 0542	0022	0135	0139 0135	0114 0134 0130	0133 0132		0124 0119 0112		0079 0125 0122 0120 0121
135.000 157.500 167.000 180.000 197.000	.9784	.6615	.6761	.3288	.2076 .2093	.0538	. 0025	0131		0130 0127	0123		0120	0114	0111 0045 .0075 .0009
210.000 220.000 225.000 232.000						.0659						0090			0039
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA .000 45.000 67.500 90.000 112.500 123.000 135.000	.0010	0114 0112 0042 0124	~.0124	0108 0111 0089 0084 0041		0098 0083 0071 0163		0082 0103 0084 0085 0070 0074 0028	0084 0073 0099 0101	0073 0051 0076 0092 0095	006S 0062 0077 0087 0083	0079 0080 0062 0066 0076	0065 0062 0146 .0126 0058	0048	0069 0060 0061 0066 0059 0082
161.000 166.000 180.000 197.000 210.000 220.000 232.000	0157 .0273	.0360	0109	0164 0251 0006	~.0009	0108	0151	0097 0074 0055	0122	0084 0104 0108 0069	0091	0086 0109 0091	0071		.0359 .0274

PAGE 378 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) T15 ALCNE EXTERNAL TANK (RQ3TDC) MACH (1) = 3.700 ALPHA(2) =.000 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0298 .0380 151.000 180.000 .0493 -.0425 210.000 .0828 MACH (2) = 4.600 ALPHA (1) = -5.000PINF .27520 Q(PSI) = 4.0915RN/L = 5.0100 CPSTG = 1.8033 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .3500 .3750 .4000 .0000 .0050 .0100 .0400 .0800 . 1500 .2500 .2750 .3000 .3250 .3350 .2000 THETA .000 -.0103 .1352 .2530 .0244 -.0146 45.000 -.0120 67.500 -.0073 -.0114 90.000 -.0071 -.0073 -.0077 .0033 -.0068 -.0080 -.0087 112.500 -.0022 -.0019 -.0028 -.0030 -.0038 .0025 .0023 .0018 135.000 .0024 .0131 157.500 .0262 167.000 .0084 .0166 180.000 .7339 .7565 .4122 .2666 .0896 .0303 .0100 .0094 .0089 .9904 197.000 .2623 .1062 .0088 .0165 210.000 .1017 220.000 .0100 225.000 .0054 232.000 -.0055 .9000 .8000 .8500 .8750 X/LT .4250 .4750 .5000 .5500 .5750 .6000 .6500 .7000 .7500 .4500 .5250 THETA .000 -.0099 -.0055 -.0122 -.0115 45.000 -.0134 -.0132 -.0138 -.0132 67.500 -.0092 -.0129 -.0132 -.0121 -.0116 -.0130 -.0132 -.0137 90.000 -.0093 -.0098 -.0106 -.0110 -.0084 -.0090 112.500 -.0037 -.0043 -.0047 -.0045 -.0058 -.0872 -,0080 -.0082 -.0091 -.0047 -.0147 -.0107 123,000

135.000

157.500

161.000

166.000

180.000

197,000

210.000

220.000

232.000

.0058

.0003

.0815

.0247

.0356

-.0067

.0011

.0112

.0071

.0215

.0100

.0107

-.0100

.0005

.0080

.0024

.0091

.0021

-.0038

.0014 -.0052 -.0090

.0012 -.0014

-.0016

-.0016

.0023

-.0001

-.0020

-.0019

.0008

-.0024

-.0028

.0003

.0006

.0221

-.0025

.0000

-.0018

-.0014

.0010

.0097

.0027

.0043

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-.0072

.0365

.0391

.0431

232.000

TABULATED SOURCE DATA - IH4

PAGE 379 UPWT 1059 (IH4) T15 ALONE EXTERNAL TANK (RQ3TDC) MACH (2) =4.600 ALPHA (1) = **-5.000** SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .9250 .9350 .9370 .9750 THETA 123.000 .0200 151.000 .0635 180.000 .0668 -.0292 210.000 .0932 MACH (2) = ALPHA (2) =4.600 1.8033 .27320 Q(PSI) = 4.09155.0100 SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS X/LT .0000 .0050 .4000 .0100 .0400 .0800 . 1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 THETA .000 .3417 .2019 .0569 -.0012 45.000 -.0071 67.500 -.0059 -.0063 -.0024 90.000 -.0062 .0744 -,0057 -.0061 -.0063 -.0068 -.0065 112.500 -.0061 -.0064 -.0059 -.0062 -.0051 135.000 -.0049 -.0032 ~.0065 -.0063 157.500 -.0005 167.000 -.0025 180.000 .2046 .9986 .6688 .6588 .3206 . 0544 .0092 -.0070 -.0081 -.0080 -.0055 .0013 197.000 .2032 .0659 -.0079 210.000 -.0025 .0658 220.000 -.0055 225.000 -.0008 232.000 -.0020 X/LT .4250 .4508 .4750 .5000 .5250 .5500 .8750 .9000 .5750 .6500 .7000 .7500 .8000 .8500 .6000 THETA .000 -.0011 -.0013 45.000 -.0074 -.0070 -.0070 -.0054 67.500 -.0061 -.0026 -.0053 -.0052 -.0053 -.0052 90.000 -.0061 -.0060 -.0044 -.0059 -.0055 -.0024 -.0042 -.0048 -.0046 -.0055 112.500 -.0058 -.0056 -.0039 -.0046 -.0045 -.0041 -.0042 -.0043 -.0046 123.000 -.0027 -.00B9 -.0035 135.000 -.0052 -.0056 -.0046 -.0027-.0043 -.0050 -.0053 -.0053.0089 -.0074 157.500 -.0075 -.0069 -.0097 -.0053 -.0116 -.0042 -.0126 -.0123 -.0120 -.0119 -.0110 .0184 -.0098 161.000 166.000 -.0072 -.0115 180.000 .0155 .0004 .0451 -.0176 -.0102 -.0041 -.0394 -.0116 -.0142 -.0130 -.0125 -.0123 -.0113 .0173 197.000 .0025 -.0135 .0153 210.000 -.0094 -.0123 220.000 .0009 -.0081

-,0083

-.0124

(-)

TABULATED SOURCE DATA - 1H4

(RQ3TDC)

UPWT 1059 (1H4) T15 ALONE EXTERNAL TANK

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (I)EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9350 .9370 .9750

THETA 123.000 151.000 180.000 210.000

.0139

.0447 .0404 -.0342 . .0684

PAGE 380

TABULATED SOURCE DATA - IH4

PAGE 381

				UPM	IT 1059 (IH4) SBN	116 ALONE	50L10	RCKT. B	ISTR.		(RQ3	SEA) (19 APR	76)
	REFE	RENCE DA	ATA									PARAMETR	IC DATA		
LREF = 1	2690.0000 1290.3000 1290.3000	INCHES		= .	0000 INC 0000 INC 0000 INC	HES				AB	J/L =	1.200	ALPHA	, = .	.000
MACH (1)) = 3.	700 E	BETA (1) = -5	5.000 P	INF =	. 1 3 1 7 7	Q(PS	1) = 1.	2625	RN/L	= 1.200	O CP	STG =	1.7839
SECTION	(1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	°S							
X/LSRB	.0000	.0040	.0250	.0500	.0750	11000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.500 260.000	. 9792		.1105	.1199 .0680		.1277 .0671		.0088	,	0229	0159	0209	0152 0149 0165 0185	016 5	0114
270.000 315.000		.1349	.1013	.1001	.1013	.1179	.1047	.0088	0012	0144	0191	0201 0108	0195	0171	0212
X/LSRB	.7000	.7800	-8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000 215.000 225.000	0079 0059	.0459 .0212	0229 0276	.0037	.0127	.0760	.0150	.0288 .0617 .0252	.0097	.0228	.0497 .0079 .0186	.0688 .0395			
240.000 247.500 270.000 315.000	0084 0067 0108	0074	0276	.0008				.0216			.0276	.0366			
MACH (1) = 3.1	700 E	BETA (2	;) =	.000 P	INF =	. 13177	Q(PS	1) = 1.	2625	RN/L	= 1.200	G CF	STG =	1.7839
SECTION	(1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	.9840		.1142	.1213		.1284 .1259		.0182		0136	0059	0069	0098 0118 0042 0145	0132	0056 0121
270.000 315.000		.1382	. 1048	.1112	.1146	.1220	. :080	.0106	.0004	0136	0136	0167 0164	0151	0134	0118

				UPW.	F 1059 (1	H4) SBN	16 ALONE	SOLID	RCKT. 8	STR.		(RQ3	SEA)		
MACH (1)	= 3.7	700 B	ETA CE) = '	.000										
SECTION (DSOLID	RCKT. B	STR		DEPENDEN	T VARIA	BLE CP/CF	°5							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900			
PSI 90.000 180.000 210.000 215.000	0085	.0523	.0011	.0045	. 9040	.0439	.0213	.0092 .0165 .1480	.0088	.0427	.0355	.0543 .0559			
225.000 240.000 247.500 270.000 315.000	0034 0020 0050		0027	.0049				.0089			.0320 .0242	.0506 .0415		· .	
MACH (1)	= 3.7	700 B	ETA (3) =	.000 PI	NF #	. 13177	QCPSI) = 1.	2625	RN/L	× 1.200	O CP	STG =	1.7839
SECTION (DISOLID	RCKT. B	STR		DEPENDEN	IT VARIA	BLE CP/CF	s							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.:100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	.9783		.1010	. 1052 . 1877		.1106 .1917				0035	.0111	0124	0220 .0021 0075 0137	0145	0109 0158
260.000 270.000 315.000		.1366	.1058	.1107	.1137	.1219	.1088	.0182	.0004	0128	0125	0158 0171	0163	0156	0169
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.5250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000	0136 0007	.0437 .0228	0221 0275	.0107	.0278	.4956	.1634	.0161 .0998 .1289	.0260	.0469	.1307	.0531 .0100			
225.000 240.000		.0120	-,0267	.0103			1034	.0754 .0516	. 0200		.0694	.0704			
247.500 270.000 315.000	0156 0169 0169	0089	0275	0012				.0165		•		.0552	,		

PAGE 383 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3SEA) UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR. MACH (2) =4.600 BETA (1) = RN/L 1.2000 CPSTG = 1.8033PINF 4(PSI) = .98320.66400-01 SECTION (1) SOLID ROKT, BSTR DEPENDENT VARIABLE CP/CPS .6000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .1100 PSI 90.000 .0967 .0809 .0888 -.0085 .9818 .1140 180,000 . 1066 .0006 -.0150-.0183 225.000 -.0163 -.0060 -.0207 -.0213 -.0220 247,500 -.0197 260,000 .0265 -.0234 -.0237 270.000 .1357 .0980 .1050 .1105 .1230 .1092 .0108 -.0020 -.0051 -.0227 -.0230 315.000 -.0240 X/LSRB .7000 .9600 .9900 .9200 .9500 .7800 .8000 .9000 .9100 .9250 .9300 .9400 PSI .0039 .0122 90.000 -.0034 .0619 .0070 .0213 .0300 180,000 -.0103 .0068 -.0020 .0028 1550. 210.000 .0175 .1057 .0484 .0070 .0040 215.000 .0145 .0077 .0077 225.000 -.0020 .0044 .0213 .0049 .0332 240.000 .0093 .0175 247.500 -.0224 270.000 -.0237 .0049 -.0020 .0049 .0028 .0400 315.000 -.0240 MACH (2) = 4.600 PINE .66400-01 Q(PSI) = .98320 RN/L 1.2000 CPSTG Ŧ 1.8033 BETA (2) = 5.000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .6000 .5000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 PSI -.0194 90.000 .0963 .1071 .9914 .1007 180,000 .1790 .1817 .0130 .0011 -.0072 .0010 -.0042 225.000 247.500 -.0089 -.0105 -.0132-.0148 260.000 .0287 -.0043 -.0165 -.0172 -.0172 -.0182 270.000 .1382 .1023 .1089 .1120 . 1244 .1116 .0109 -.0029 -.0188 315.000 .9900 .9800 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 PSI .0055 .0212 90.000 -.0157 .0573 -.0059 .0692 .1002 .0915 180.000 .0188 -.0118 .0144 -.0012 .0442 .5319 . 1304 210.000 .0238 .0125 215.000 .1728 .0344 -.0118 .0144 .0389 .0599

.0329

.0692

.0757

225.000

240.000

.0:19

TABULATED SOURCE DATA - IH4

PAGE 384

UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEA)

MACH (2) = 4.600 BETA (2) = 5.000

SECTION (1)SOLID RCKT. 991R

DEPENDENT VARIABLE CP/CP5

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9480

PSI 247.500 270.000 315.000

-.0158 -.0182 -.0019 -.0118 -.0188

.0029

.0527

TABULATED SOURCE DATA - 1H4 PAGE 385 UPWT 1059 (IH4) S8N16 ALONE SOLID RCKT. BSTR. (15 APR 76) (RQ3SEB) REFERENCE DATA PARAMETRIC DATA SREF = 2590.0000 SQ.FT. LREF = 1290.3000 INCHES XMRP = .0000 INCHES RN/L 3.000 ALPHA =

	290.3000		ZMRP		DOOD INC										
MACH ([)	= 3. °	700 B	ETA (1) = -5	5.000 P	INF =	.32900	Q(PS	1) = 3.	1528	RN/L	= 3.000	O CP	STG =	1.7839
SECTION (1)SOLID	RCKT. B	STR		DEPENDE	VARIA	BLE CP/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1.00	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PS1 90.000 180.000 225.000 247.500	.9770		.1101	.1210 .0755		. 1280 . 0781				0237	0162	0160	0099 0098 0119 0132	0115	0107 8108
260.000 270.000 315.000		.1345	.1081	.1138	.1180	.1180	.1065	.0073	0058	0151	0161	0146 0044	0142	0127	0115
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000 215.000	0022	.0367 .1019	0315 0265	0025	.0137	. 1633	.0714	.0587 .0645 .0543	.0211	.0257	.0617	.0674 .0415			
225.000 240.000	2222	.0178	0284	0052			10 17	.0466 .0369	.0011		.0473	.0427			
247.500 270.000 315.000	0022 0019 0043	.0129	0331	0047				.0435				.0354			
MACH (1)	i = 3.º	700 B	ETA (E	<u> </u>	.000 P	INF =	.32900	Q(PS	1) = 3.	1528	RN/L	= 3.000	O CF	STG =	1.7839
SECTION 1	1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/C	PŚ							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1 00	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6009
PS1 90.000 180.000 225.000 247.500 260.000	.9801		.1107	.1202		. 1272 . 1333		.0135		0149	0074	0067	0061 0045 0072 0078	0066	0053 0054
270.000 315.000		.1350	.1116	.1194	.1238	. 1232	.1.06	.0133	0041	0137	0127	0100 0107	0084	0067	0056

				UPW	T 1059	(1H4) SBN	16 ALONE	SOLID	RCKT, B	STR.		(RQ3	SEB)		
MACH (1)	= 3.7	700 B	ETA (2) =	.000										
SECTION (DSOLID	RCKT. B	STR		DEPEND	ENT VARIA	BLE (P/C	PS							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9850	.9300	.9400	.9500	.9800	.9900			
PSI 90.000 180.000 210.000	.0056 .0079	.0358 .0110	0301 0325	.0027	.0260	.3926		.0636 .0915 .1209	n700	.0319	.0976	.0820 .0631			
215.000 225.000 240.000 247.500	.0052	.0129	0338	.0014			.1963	.1081 .0824	.0360		.0115 .0812 .0900	.0763			
270.000 315.000	.0037	.0259	0344	.0014				. 0557				.0392			
MACH (1)	= 3.7	700 Bi	ETA (3) = 5	.000	PINF =	.32900	Q(PS	11 = 3.	1528	RN/L	3.000	0 CP	STG =	1.7839
SECTION (DSOLID	RCKT. B	STR		DEPEND	ENT VARIA	BLE (P/C	PS							
X/LSRB	.0000	.0040	.0250	.0500	. 0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	.9736		. 1084	. 1 140 . 1944		.1200 .1952				0020	.0111	0087	0154 .0064 0045 0128	0148	0075 0158
260.000 270.000 315.000		.1341	.1108	.1187	. 1220	.1220	.1096	.0150	0045	0144	0133	0175 0202	0201	0192	0176
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000	0077	.0330	0321 0346	.0071	. 0292	.4277		.0426 .1155 .1261	5500	.0416	. 1270	.0510 .0863			
215.000 225.000 240.000		.0051	0352	.0004			.1-59	.1007	.0202		0003 .0655 .0800	.0690			
247.500 270.000 315.000	0089 0077 0090	.0091	~.0349	0034				.0474			.0000	.0525			

DATE 20 AP	R 76		TABULAT	ED SOURC	E DATA -	114								PAGE	387
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		T 1059 ()		16 ALONE	SOLID	RCKT. B	STR.		(RQ3	SEBI		
MACH (1)	n 3.1	700 E	ETA (4) = 10	.000 P1	NF =	.32900	Q(PS	I) = 3.	1528	RN/L	= 3.000	G CF	STG =	1.7839
SECTION (1)SOL1D	RCKT. E	STR		DEPENDEN	IT VARIA	BLE CP/CP	95							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500 260.000	. 9634		.1063	.1068 .2726		.1113 .2709		.0174		.0180	.0392	0052	0258 .0309 .0079 0115	0150	.0074 0174
270.000 315.000		.1367	.1112	.1188	.1217	.1212	.1085	.0174	0055	0139	0115	0229 0300	0290	0321	0314
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 90.000 180.000 210.000	0199 .0266	.0156 .0506	0387 0253	.0261	.0511	.5492		0020 .1776 .1793		.0759	. 1869	.0135 .1397			
215.000 225.000 240.000 247.500 270.000	0181 0184	.0171 0170	0356	.0091 0176			. 1575	.1092 .0661 0020	.0250		.0031 .0859 .0780	.0770	·		
315.000 MACH (2) SECTION (BETA (1 BSTR) = - 5		INF =	.16560 BLE CP/CP		1) = 2.	4534	RN/L	= 3.000	O CF	°STG ≠	1.8033
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	.9974		.0978	.1093 .0683		.1186 .0728				0148	0077	0105	0115 0062 0087 0109	0112	0101 0112
260.000 270.000 315.000		.1366	.1062	.1140	.1182	. 1200	. 1 393	.0186	.0052	0063	0088	0093 0000	0096	0095	0076
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000	0056 .0001	.0360 .0340	0177 0185	.0003	.0076	.0799	. 0249	.0222 .0391 .0376	.0128	.0215	.0418 .0103	.0539 .0312			
225.000 240.000		.0024	0157	0013			.0273	.0188 .0227	*0150		.0239	.0371			

270.000

(RQ3SEB) UPNT 1059 (IH4) S8N16 A_ONE SOLID RCKT. BSTR. BETA (1) = -5.000SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

315.000 -.0036 1.8033 Q(PSI) = 2.45343.0000 MACH (2) =4.600 .16560 (5)= DEPENDENT VARIABLE CP/CPS SECTION (1) SOLID RCKT. BSTR .2000 .3000 .4000 .5000 .6000 X/LSRB .0000 .0040 .0250 .0500 .1000 .1.00 .1150 .1300 .1500 PSI -.0084 90.000 1.0845 .1010 .1111 .1108 -.0015 -.0070 180.000 .1245 1304 -.0073 225.000 -.0071-.0080 -.0074 -.0097 -.0087 -.0080 247.500 260.000 .0260 -.0081 .0075 -.0051 -.0067 -.0095 -.0089 270.000 . 1255 .1273 .1351 . 1391 .1106 .1202 -.0101 315.000 .9600 .9900 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .0583 .0243 90.000 -.0015 .0402 -.0142 .0610 .0286 .0671 180.000 -.0173 .0089 .0009 .0063 .0307 .3075 .1195 210.000 .0113 .0289 .0080 215.000 . 1868 .0277 .0871 225.000 .0075 -.0169 .0089

.07″₹ 240.000 .0259 .0583 .0000 247.500 .0413 .0247 270,000 .0004 .0079 -.0185 315.000 -.0017 CPSTG = 1.80333.0000 Q(PS1) = 2.4534RN/L MACH (2) =4.600 BETA (3) =5.000 PINF = .16560SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS .1150 .1500 .2000 .3000 .4000 .5000 .6000 X/LSRB .0500 .1300 .0000 .0040 .0250 .1000 .1:00 PSI -.0148 90.000 .9938 .0997 .1055 .1123 .0137 .0048 . 1969 . 1967 180.000 -.0049 .0035 -.0017 225.000 -.0084 -.0105 -.0117 247.500 260.000

.0276 .1395 .1119 .1216 .1258 .1273 .1.47 .0071 -.0051 -.0057 -.0129 -.0149 -.0160 -.013

PAGE 389

(RQ3SEB)

315.000

-.0135

TABULATED SOURCE DATA - 1H4

UPWT 1059 (IH4) S8N16 ALONE SOLID RCKT. BSTR.

MACH (2) = 4.600 BETA (3) = 5.000

SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS .5000 .6000 .4000 X/LSRB .0250 .0500 .1000 .1:00 .1150 .1300 .1500 .2000 .3000 .0000 .0040 .0750 PSI 315.000 -.0171.9900 X/LSRB .9200 .9250 .9300 .9400 .9500 .9600 .7000 .7800 .8000 .9000 .9100 PSI .0396 90.000 -.0104 .0343 -.0177 .0119 .0870 .1145 .0856 180.000 .0022 .0201 .0096 -.0197 210.000 .0251 .4353 . 1293 .0396 .0070 215.000 .1483 .0275 .0810 .0662 225.000 -.0205 .0059 .0095 .0755 .0653 240.000 .0532 247.500 -.0105 .0509 270.000 -.0094 -.0032 -.0217 -.0027 .0245 315.000 -.0109 = 1.8033 MACH (2) =4.600 BETA Q(PSI) = = 3.0000 CPSTG 10.000 SECTION (1) SOLID RCKT, B5TR DEPENDENT VARIABLE (P/CPS .6000 .4000 .5000 X/LSR8 .1500 .2000 .3000 .0000 .0040 .0250 .0500 .0750 .1000 .1:00 . 1150 .1300 .0975 .2714 -.0186 90.000 .9826 .0968 .1027 180.000 .0387 .0310 .2694 .0135 .0114 225.000 .0217 247.500 .0038 -.0013 -.0040 -.0050 260.000 .0288 -.0187270.000 -.0035 -.0021 -.0101 -.0150 -.0172 .1207 .1243 .1249 .1:31 .0063 .1415 .1124 315.000 -.0192 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900 PSI -.0178 .0011 .0122 90.000 .0272 -.0213 180.000 ..0279 .0481 -.0114 .0260 . 1531 . 1899 . 1483 .0755 210.000 .0480 .6051 .2076 215.000 .1902 .0414 .0163 .0967 225.000 .0193 -.0185 .0179 .1081 240.000 .0607 .0885 .0884 -.0059 247.500 -.0150 .0024 .0750 -.0146 -.0252 -.0056 270.000

				UPH	IT 1059 (1	1H4) 58N	16 ALONE	SOLID	RCKT. E	BSTR.		(RQ3	SEC) (15 APR	76)	
	REFER	RENCE DA	ŤΑ									PARAMETR!	C DATA			
LREF = 1	0000.000 290.3000 290.3000 0100	INCHES	YMRP	= ,	0000 INC	HES				RN	!/L =	5.000	ALPHA	•	.000	
MACH ([)	= 3.7	700 B	ETA (t) =	.000 P	INF =	.54880	QIPS	I) = 5.	.2588	RN/L	= 5.0000	CP	STG =	1.7839	
SECTION (11501.10	RCKT. B	STR		DEPENDEN	NT VARIA	BLE CP/CF	°5								
X/LSR8	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2006	.3000	.4000	.5000	.6000	
PSI 90.000 180.000 25.000 247.500	.9778		.1080	. 1 168 . 1264		.1239 .1308		#100		0138	0084	0089	0072 0056 0065 0070	0053	0043 0043	
260.000 270.000 315.000		.1353	.1111	.1193	.1236	. 1242	.1120	.0129	0056	0132	0119	0090 0098	0079	0053	0057	
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900				
PSI 90.000 180.000 210.000 215.000	.0003	.0693 .0318	0275 0309	.0008	.0248	.3091	.1743	.0530 .0749 .1230	.0314	.0312	.0796	.0764 .0600				
225.000 240.000 247.500	.0005	.0443	0297	0010			.1743	.0988 .0735	.0314		.0735 .0795	.0735				
270.000 315.000	0055 0077	.0909	0318	0004				.0533				.0393	•			
MACH (1)	= 3.7	700 B	ETA (2) = 5	5.000 P	INF =	.54880	Q(PS	1) = 5.	.2588	RN/L	= 5.000	. CP	STG =	1.7839	
SECTION (1)SOL1D	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	PS								
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	. 1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000	
PSI 90.000 180.000 225.000 247.500 260.000	.9750		. 1055	.1109 .1941	·	.1164 .1933		.0140		0009	.0104	0071	0182 .0071 0011 0095	0116	0042 0131	
270.000 315.000	. •	. 1343	.1107	.1193	.1227	. 1228	.1114	.0140	0063	0140	0132	0146 0186	0173	0181	0186	

PAGE 391

TABULATED SOURCE DATA - IH4

(RO3SEC) UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR. MACH (1) = 3.700 BETA (2) = 5.000 DEPENDENT VARIABLE CO/CPS SECTION (1) SOLID RCKT. BSTR .9500 .9600 .9900 X/LSRB .7000 .7800 .8000 .9000 .9200 .9250 .9300 .9400 PSI .0357 .0471 -.0337 90.000 -.0076 .0231 . 1203 .1217 .0857 .0190 180.000 .0079 -.0376 .0059 .0437 210.000 .0304 .4295 .1224 -.0006 .0166 215.000 .1432 .0957 .0663 225.000 -.0009 .0052 -.040i .8695 .0771 .0760 240.000 247.500 -.0017 ~.0048 .0450 .0514 270.000 .0151 -.0387 -.0066 315.000 CPSTG = 1.8033 5.0000 .27600 Q(PSI) = 4.0883RN/L MACH (2) =4.600 BETA (1) = .000 SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS .5000 .4000 X/LSR8 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .0000 .0040 -.0060 .1184 90.000 .9955 .1005 .1103 -.0019 -.0025 180.000 .1241 .1302 -.0042 -.0040 -.0065 225.000 -.0045 -.0044 -.0045 247.500 260.000 .0246 -.0056 -.0058 -.0056 270.000 .1264 .1151 .0052 -.0051 -.0061 -.0054 .1359 .1104 .1206 .1263 -.0067 315.000 .9500 .9600 .9900 X/LSRB .9200 .9230 .9300 .9400 .7000 .7800 .8000 .9000 .9100 PS! .0641 90.000 .0009 .0437 -.0162 .0335 .0571 .0790 180.000 .0082 .0135 -.0202 .0008 .0613 ,3346 .1182 .0279 210.000 .0169 .0339 .0129 .1738 215.000 . 0844 .0756 225.000 -.0207 .0010 .0144 .0712 .0776 240.000 .0580 .0052 247.500 .0489 .0034 .0403 270,000 .0279 -.0207 .0017 315.000 -.0028

				UPW	T 1059 (IH4) SON	16 ALDNE	SOLID	RCKT. B	STR.		(RQ3	SEC)		
MACH (2)	= 4.6	500 E	ETA (2) = 5	.000 P	INF =	.276 10	Q(PSI) = 4.	0883	RN/L	- 5.000	O CP	STG =	1.8033
SECTION (1150LID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CP/CF	s							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	. 11:10	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI 90.000 180.000 225.000 247.500	1.0029		.1012	.1072 .1966		.1138 .1951				.0045	.0136	0010	0132 .0119 .0102 0037	6041	.0096 0045
260.000 270.000 315.000	•	.1371	.1119	. 1227	.1266	.1262	.1146	.0258	.0045	0051	0059	0083 0134	0108	0124	0129
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI 90.000 180.000 210.000 215.000 225.000 240.000 247.500 270.000 315.000	0075 .0106	.0307 .0189 .0071	0198 0212 0223	.0079	.0252	. 416 5	. 1420	.0205 .0910 .1273 .0868 .0582	.0232	.0368	.1148 .0048 .0634 .0719	.0374 .0837 .0835			

PAGE 393

	T 1059 (1	(H4) SBN	16 ALCNE	NE SOLID RCKT. BSTR. (RQ3SEF) (19 APF							76)				
	REFER	RENCE DA	TA			•							IC DATA		
LREF =	0000.295 0000.3000 1290.3000 1290.3000	INCHES	YMRP	= .	0000 INC 0000 INC 0000 INC	IES				RN	//L =	3.000	ALPHA	=	.000
MACH ()) = 3.7	70 0 B	ETA (1) = -5	.000 PI	INF =	. 329(4	Q(PS	1) = 3.	1532	RN/L	= 3,000	O CP	STG ≠	1.7839
SECTION	(1)SOLID	RCKT. B	STR		DEPENDEN	NT VARIA	BLE CF/CF	95							
X/LSR8	.0000	.0040	. 0250	.0500	.0750	.1000	.1700	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000		.0892	.0661	.0684	.0709	.0709	. 057 0		0167	0244	0205	0174 0175	0159	0142	0098
180.000 270.000 315.000 337.500 350.000	.9795		.1771	.1907 .1299		. 1945 . 1342		0031		0244	0084	0170	.0029 0137 0161 0170	0171	0168 0172
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI .000 45.000 180.000 270.000	0047 0081 0002 0046		0325 0319 0337	0071				.0534 .0885 .0766			.0847	.0394 .1052 .0569			
300.000 305.000 315.000 330.000 337.500	0072	.0053	0238	0046	.0118	.1181	.0230	.0513 .0228 .0292	.0006	.0120	0092 8110. 2230.	.0211			
MACH (1) = 3.	700 8	ETA (8	<u> </u>	.000 P	INF =	.329(4	QIPS	i) = 3.	1532	RN/L	= 3.000	O CF	STG #	1.7839
SECTION	(1)SOLID	RCKT. B	STR		DEPENDE	NT VARIA	BLE CF/C	P5							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000 180.000 270.000	. 9801	.1350	.1116	.1194 .1202 .1288	. 1238	.1232 .1272 .1333	.1166		 0041		0127	0100 0107	0084 0061 0045 0072	0067	0056 0053
315.000 337.500 350.000								.0135		0149		0067	0078	0066	

UPWT 1059 (IH4) S8N16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

				O 11			IO ALONE	20110							
MACH (1)) = 3.7	700 B	ETA (2) =	.000										
SECTION (1)SOLID	RCKT. B	STR		DEPENDEN	NT VARIA	BLE (P/C	es							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI .000 45.000 180.000	.0037 0007 .0056	.0259	0344	.0014				.0557				.0392			•
270.000 300.000	.0079	.0110	0325	.0027	.0260	. 3926		.0915		.0319	.0976	.0631			
305.000 315.000 330.000 337.500	.0052	.0129	0338	.0014	.0280	. 2350	.1963	.1081 .0924	.0360	.0313	2110. S180. 0000.	.0763			
MACH (1)	3.7	700 8	ETA (3)) = 5	.000 P	NF =	.32904	Q(PS	1) = 3.	1532	RN/L	= 3.000	0 CP	STG =	1.7839
SECTION (1/SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS															
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 .000 45.000		.1988	. 1670	. 1794	.1820	.1806	1654		.0153	.0039	.0027	0012	00''	0011	0013
180.000 270.000 315.000 337.500 350.000	.9778		.0705	.0741 .1244	·	.0773 .1277		.0330		0030	-,0099	0011	0123 0092 0009 0012	0012	0011 0012
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1 .000 45.000	~.0010 0012	.0240	0362	.0068				.0760				.0404	-		
180.000 270.000 300.000	0038 0007	.1159 .0119	0265 0340	0026	.0241	.4078		.0525 .0734 .1167		.0322	.0698	.0538 .0413	•		
305.000 315.000 330.000 337.500	0013	.0107	0352	0003			.2900	.1378 .0943	.0729		.0322 .1136 .1193	.1034			

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.0052

.0172

.0060

. 1591

.1005

.3075

PAGE 395 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 UPWT 1059 (1H4) S8N16 ALONE SOLID RCKT. BSTR. (ROSSEF) 1.7839 3.700 MACH (1) =BETA (4) = Q(PSI) = 3.1532RN/L 3.0000 10.000 PINF .32904 SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CP/CPS .5000 .6000 X/LSRB .0250 .0500 .1150 .1300 .1500 .2000 .3000 .4000 .0000 .0040 .0750.1000 .1100 PSI .000 .0252 .0196 .0196 .0181 .2591 .2560 . 2530 .2358 .0446 .0322 .0281 ,2449 .2561 45.000 .0082 -.0128 1B0.000 .9561 .0411 .0434 .0404 -.0130 270.000 -.0213 .1177 .1189 .0003 .0127 315,000 .0022 .0182 .0203 .0143 .0138 337.500 350.000 .0595 X/LSRB .9200 .9300 .9400 .9500 .9600 .9900 .7000 .7800 .8000 .9000 .9250 .9100 P51 .0407 .000 .0181 .1490 -.0065 .0241 .1111 45.000 -.0065 180.000 .0793 .0219 .0660 -.0160 -.0325 270.000 -.0242 .0084 -.0378 -.0155 .0028 .0128 .0129 300.000 .3665 .0390 .0121 .1153 .1186 , 0549 305.000 .3723 .1460 315.000 .1007 -.0272 -.0011 .1397 330.000 1043 .1422 .1431 337.500 .0128 3.0000 CPSTG = 1.7839MACH (1) =3.700 (5) = 20.000 PINF .32934 Q(PSI) = 3.1532 RN/L DEPENDENT VARIABLE CP/CPS SECTION (1) SOLID RCKT. BSTR .5000 .6000 .4000 .2000 .3000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 PSI .000 .4636 .4403 .4407 .4373 .4332 .4036 . 1304 .1195 .1112 .1011 .0978 .1054 .1066 45.000 .0526 .8553 -.0358 180.000 .0105 .0093 .0044 -.0295 -.0150 270,000 .1050 .0997 .0399 .0594 .0403 315.000 .0823 .0812 .0810 .0881 337.50Q 350.000 .1441 X/LSRB .7000 .7800 .9500 .9600 .9900 .8000 .9000 .9100 .9200 .9230 .9300 .9400 PSI .000 .1069 .0456 .3219 .0212 .3048 .1134 45.000 .0369

-.0100

-.0021

.6934

. 1951

180.000

270,000

300.000

305.000

-.0361

-.0321

.0153

.0100

-.0414

-.0427

-.0300

. 0629

.5598

PAGE 396 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 UPWT 1059 (IH4) S8N16 ALDNE SOLID RCKT, BSTR. (RQ3SEF) MACH (1) = 3.700 BETA (5) = 20.000SECTION (1) SOLID ROKT, BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .7000 .9100 .9600 .9900 .7800 .8000 .9000 .9200 .9250 .9300 .9400 .9500 PSI 315.000 .2327 -.0070 .0436 .3142 330.000 .2441 .3077 .3201 .0875 337.500 PINF MACH (11 = 3.700Q(PSI) = 3.1532= 3.0000 CPSTG = 1.7839 BETA (6) = 40.000 = .32904 RN/L SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .6000 .4184 .000 .8318 .8243 .7473 .4053 .4304 , կկկկ .4151 .4212 .8711 .8197 .8116 .4110 45.000 .2522 180.000 .4617 -.0266 -.0277 -.0432 -.0160 270.000 -.0058 -.0132 .0893 .0811 .2103 315.000 .2038 .2072 337.500 .3605 .3531 .3432 .3507 350.000 .3215 X/LSRB .7000 .9000 .9600 .9900 .7800 .8000 .9100 .9200 .9250 .9300 .9400 .9500 PSI .000 .4124 .8486 .0953 .4008 .7206 .0523 45.000 . 1931

305.000 305.000 315.000 330.000 337.500	.3426	.4842	.0647	.1921	.2014	.7766	1.2003	.8881 .5983	.8109	.2596	.4242 .6259 .6999	.7074			
MACH (C.1)	= 3.7	700 B	ETA (7) = 48.	.000 PI	INF =	.32904	Q(PS)	1) = 3.1	532	RN/L =	3,0000	CPS	STG =	1.7839
SECTION (1)50110	RCKT. 9	STR		DEPENDEN	NT VARIA	BLE CP/CF	PS .							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000	•	.9963	.9613	.9516	.9369	. 8953	.7873		.5968	.5880	.6139	.5996 .3435	.5591	.5710	.5682
180.000 270.000	.3272		0255	0265		0367 .0733					0006		0296 .0007		

-.0272

.0245

-.0341

.0927

.4859

.2793

.4741

.4666

.2865

.4746

.0490

.2847

180.000

270.000

315.000

337.500

-.0322

-.0116

-.0096 -.0269

.0492 -.0337

-.วถ28

337.500

-.0042

PAGE 397 DATE 20 APR 76 TABULATED SOURCE DATA - IH4 (RQ3SEF) UPWT 1059 (1H4) SBN16 ALCNE SOLID RCKT, BSTR. 3.700 MACH (1) = BETA (7) = 48.000SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CFYCPS .5000 .5000 .1300 .1500 .2000 .3000 .4000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1150 .1100 PS1 350.000 .3878 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900 PSI .000 .5622 1.0737 . 1260 .5351 .9380 .0553 45.000 .2729 180.000 -.0280 -.0234 -.0354 -.0133 -.0213 .0874 270.000 .0017 .0521 .0459 .0973 -.0263 .0178 300.000 .3124 .7623 .2863 .1120 .9897 .8360 305.000 1.3162 315.000 .2706 .9423 .9252 .5762 .0791 1.0302 .6908 330.000 .7960 337.500 .4673 Q(PSI) = 2.4545RN/L **= 3.0000** CPSTG = 1.8033 MACH (2) = 4.600 -5.000 PINE BETA (1) = = .16567 SECTION (1) SOLID RCKT, BSTR DEPENDENT VARIABLE CF/CPS .6000 .5000 X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .11(0 .1150 .1300 .1500 .2000 .3000 .4000 PSI .000 .0917 .0647 .0708 .0590 -.0134 -.0132 -.0113 -.0105 -.0091 -.0074 .0634 .0678 -.0048 45.000 -.0116 3500. 180.000 .9835 .1790 . 1555 .1726 -.0050-.0023 270.000 .1176 .1246 -.0072 -.0105 315.000 -.0150 -.0091 -.0071 -.0118 -.0107 337.500 350.000 .0078 X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .92:0 .9300 .9400 .9500 .9600 .9900 PSI .000 .0250 .0412 -.0033 .0267 -.0201 -.0041 45.000 -.0049 180.000 .0913 -.0010 .0523 -.0170 .0640 270.000 -.0028 .0357 .0662 . 0544 -.0025 -.0209 .0043 300.000 .0212 .0055 .0989 .0816 305,000 -.0036 -.0111 315.000 .0158 .0019 -.0150 -.0005 .0091 .0217 .0151 330.000 .0121

			111000111		L Date	****										
				UPW	NT 1059 (IH4) S8N16 ALCNE SOLID RCKT. BSTR.							(RQ3SEF)				
MACH (?	÷ 4.8	600 B	ETA (2) =	.000 P	INF =	.16567	Q(PSI	() = 2.	4545	RN/L	= 3.000	O CP	STG =	1.8033	
SECTION .	::50L10	RCKT. B	STR		DEPENDE	NT VARIA	BLE CF/CP	°5								
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000	
PSI .000 45.000 180.000	1.0045	. 1391	.1106	.1202	. 1255	.1273	.1151		.0075	0051	0067	0095 0101	0089 0084	0081	0076	
270.000 315.000 337.500 350.000	1.0073		.1010	.1245	•.	.1304		.0260		0071	0015	0097	0070 0080 0087	0080	0073 0074	
X/LSR8	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900				
PS! .000 45.000	.0004 0017	.0079	0185	.0073				.0247				.0413				
180.000 270.000 300.000	0015	.0402 .0063	0142 0173	.0089	.0113	.3075		.0243 .0286 .1195		.0307	.0610	.0583 .0671				
305.000 315.000 330.000 337.500	.0000	.0075	0169	.0089	.0115	.5075	.1863	.0277	.0289	.0307	.0080 .0871 .0583	. 0778				
MACH (2)	= 4.	500 8	ETA (3) = 5	5.000 P	INF =	.16567	Q(PSI	() = 2.	4545	RN/L	= 3.000	10 C P	STG =	1.8033	
SECTION (1)SOLID	RCKT. E	STR		DEPENDE	NT VARIA	BLE CF/CF	°S								
X/LSRB	.0000	. 0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000	
PS1 .000 45.000		. 1942	. 1732	. 1898	.1916	.1884	.173+		.0247	.0110	.0072	.0071	.0050	.0040	.0031	
180.000 270.000 315.000 337.500	.9973		.0636	.0663 .1181		.0692 .1227				.0015	0036	.0058	0116 0075 .0000 .0042	.0027	0024 0019	
350.000								.0456								
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9800	.9900				
PSI .000 45.000	.0038	.0259	0197	.0101				. 0576				.0415				
180.000 270.000 300.000 305.000	0078 0034	.0625 0032	0170 0205	0021	.0154	.4109	.2767	.0312 .0260 .1081	.0713	.0242	. 0544	.0505 .0325				

TABULATED SOURCE DATA - IH4

				-		•									
				UPW	T 1059 ()	1H41 S8N	16 ALCNE	50L 10	RCKT. B	STR.		(RQ3	SEF)		
MACH (2)) = 4.	600 B	BETA (3) = 5	.000										
SECTION ((1)50L[D	RCKT. B	ISTR		DEPENDEN	NT VARIA	BLE CP/CF	PS .							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.925)	.9300	.9400	.9500	.9600	.9900			
PS1 315.000 330.000 337.500	.0019	.0086	0205	.0015				.0985 .0695			.1096	.1038			
MACH (2)	1 = 4.	600 B	ETA (4) = 10	.000 PI	INF =	.16567	Q(PS	1) = 2.	4545	RN/L =	3.000	o CPS	STG ≖	1.8033
SECTION (1)SOLID	RCKT. 8	ISTR		DEPENDEN	NT VARIA	BLE CP/CF	°S							
X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1103	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000		.2640	.2535	.2667	.2654	.2616	.2443		.0534	.0377	.0308	.0267	.0209	.0206	.0201
180.000 270.000 315.000 337.500 350.000	.9772		.0416	.0420 .1126		.0382 .1137		.0692		.0165	0047	.0218	0165 0168 .0055 .0172	.0154	.0032 .0154
X/LSRE	.7201	.7800	.8000	.9000	.9100	.9200	.925)	.9300	.9400	.9500	.9600	.9960			
PS1 .000 45.000	.0207 .0014	.0582	0146	.0285				.1021				.0426			
180.000 270.000 300.000	0106 0150		0166 0241	0094	.0157	.3704		.0026 .0051 .1371		.0492	.0139	.0296 .0118			
305.000 315.000 330.000 337.500	.0152	.0169	0201	.0055			.3713	.1266 .0945	.1193		.0610 .1525 .1489	. 1594			•
MACH (2)) = 4.	600 B	ETA (5) = 50	.000 PI	INF =	. 16567	QIPS	I) = 2,1	4545	RN/L =	3.000	o ces	STG =	1.8033
SECTION ((1)50LID	RCKT. B	STR		DEPENDEN	NT VARIA	BLE CP'C	es.							
X/LSR8	.0000	.0040	.0250	.0500	.0750	.1000	.110)	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000	ė.	.4671	.4498	. 4497	. 4466	.4409	.4174		. 1391	.1218	.1099	.1043 .0566	.1068	.1161	.1183
180.000 270.000 315.000 337.500	.8457		.0075	.0034 .1004		0025 .0955				.0631	0036	.0851	0283 0176 .0467 .0892	.0937	.0528 .0979

PAGE 399

UPWT 1059 (1H4) SBN16 ALOHE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (2)	= 4.8	00 BE	ETA (5) = 20	.000										
SECTION (1150L1D	RCKT. BS	STR		DEPENDEN	NT VARIA	BLE CP C	PS							
X/LSRB	.0000	.0040	.0250	.0500	. 0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1 350.000								. 1533							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
rsi .000 45.000 180.000	.1186 .0534 0275	.3145	.0485 0 <i>c3</i> 3	.1222				.3093				.0448 0144			
270.000 300.000	0184	0075	0252	0167	. 0695	.6551		.0148 .240B		.1181	.0266	.0268			
305.000 315.000 330.000 337.500	.0977	. 1647	.0035	, 0542			.735(.334B .2531	.3007		.1716 .3236 .3313	. 3659			
MACH (2)		inn Hi	ETA (6) = 4 <u>0</u>	.000 PI	INF =	. 1656"	Q(PS)	I) = 2.4	1 545	RN/L	= 3.0000) CPS	STG =	1.8033
SECTION (-				BLE CP.C								
X/LSRB	.0000	.0040	.0250	.0500	.0750	. 1000	.1101	.1150	.1300	. 1500	.2000	.3000	.4000	.5000	.6000
PSI .000 45.000		. 8334	.8009	.8035	.8134	.8107	.7491		.4047	.3977	.4343	.4513 .2581	.4227	.4273	,4259
180.000 270.000 315.000	.4382		0101	0148 .0963		0170 .0817				.2011	.0067		0202 .0017 .2106 .3570	.3484	.2149 .3558
337.500 350.000								.3407				. 3657	.3570	· DFC ·	.3330
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.925(.9300	.9400	.9500	.9600	.9900			
PSI .000 45.000	.4218 .111	.8828	.1138	. 3725				.7593				.0502			
180.000 270.000	0273 .0035	.0088 .C017	0114 0141	.0093				0121 .0367			.0554	0177 .1125			
300.000 305.000 315.000 330.000 337.500	.3500	.5173	.0751	. 1940	.2452	.7904	1.2330	.3466 .7053 .6004	.8205	.2514	.4776 .6698 .7893	.7581			

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PAGE 401

				UPW	T 1059 (IH4) SBN	16 ALONE	SOL 1D	SOLID RCKT. BSTR.				(RQ3SEF)			
MACH (2)	ւ= Կ.	600 £	BETA (7) = 48	.000 P	INF =	.16557	QIPS	11 = 2.	+545	RN/L	= 3.0000	CPS	STG =	1.8033	
SECTION (1)SOL1D	RCKT. E	STR		DEPENDE	NT VARIA	BLE (P/CF	° 5								
X/LSR2	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000	
PSI .000 45.000		.9599	.9241	.9181	.9033	.8754	.7783		.5627	.5624	.5918	.6128 .3502	.5663	.5758	.5716	
180.000 270.000 315.000 337.500	.3156		0141	0153 .0866		0151 .0750				.2701	.0167	.4944	0194 .0117 .2609 .4770	.4693	.2825 .4759	
350.000 X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.3881	. 9400	.9500	.9600	.9900				
PS!		. 7000	.0000	.5006	.5100	.9200	.36.10	.5300	.5700	. 3300	. 3000	. 3500				
.000 45.000	.5645 .2867	1.0686	.2119	.5654				.9878				.0550				
180.000 270.000 300.000	0250 .0124	.0043	0071 0091	.0267	.3183	.7923		0081 .0575 .2801		.2002	.1156	0177 .0617				
305.000 315.000 330.000 337.500	.4679	.5924	. 1009	. 2854		1 1 10 10 10	1.33+7	.9786 .7864	1.1111		.9051 1.0079 1.0564	.6273				

OF FOOR OF STREET